

# FLIGHT FOLDER



Flight No. B471  
 Date: 27 July 2009  
 Take Off: 06:44:34Z Basel  
 Landing: 10:37:12Z Basel  
 Flight Time: 3h 52m 38s

**Campaign:** CAVIAR  
**Operating Area:** Jungfraujoeh

POB	Position	Name	Institute	Logs y/n
1	Captain	Alan Foster	Directflight	
2	Co-pilot	Luc Lathouwers	Directflight	
3	CCM	Gaynor Ottaway	Directflight	
4	Flight Manager	Jamie Trembath	FAAM	
5	Mission Scientist 1	Stuart Newman	Met Office	
6	AVAPS	Doug Anderson	FAAM	
7	Cloud Physics	Kate Turnbull	FAAM	
8	Core Chem / NOx	Stephane Bauguitte	FAAM	
9	SWS	Debbie O'Sullivan	Met Office	
10	ARIES/FWVS	Dave Tiddeman	Met Office	
11	MARSS	James Bowles	Met Office	
12	TAFTS	Paul Green	Imperial College	Y
13	Mission Scientist 2	Chawn Harlow	Met Office	
14				
15				
16				
17				
18				
19				

Missing Log Sheet	Reason
ViRC chat log	poor comms meant no useful ViRC during CAVIAR
Core Chemistry / TDLAS	no In Flight log except in cases of instrument problems
CVI	No log as o operator on CAVIAR
TAFTS	No log taken?

Revision	Date	Author	Comments
r0	03 Nov 2009	Doug Anderson	Initial version missing the above noted logs
r1			

## VIDEO RECORDINGS:

The following avi format video recordings should be available at the BADC in core\_processed/faam-video :

faam-video-dfc\_faam\_20090727\_r0\_b471\_065002\_1hz.avi  
 faam-video-dfc\_faam\_20090727\_r0\_b471\_085628\_1hz.avi  
 faam-video-dfc\_faam\_20090727\_r0\_b471\_095709\_1hz.avi

faam-video-ffc\_faam\_20090727\_r0\_b471\_064951\_1hz.avi  
 faam-video-ffc\_faam\_20090727\_r0\_b471\_074951\_1hz.avi  
 faam-video-ffc\_faam\_20090727\_r0\_b471\_075523\_1hz.avi  
 faam-video-ffc\_faam\_20090727\_r0\_b471\_085523\_1hz.avi

faam-video-ffc\_faam\_20090727\_r0\_b471\_085626\_1hz.avi  
 faam-video-ffc\_faam\_20090727\_r0\_b471\_095704\_1hz.avi

faam-video-ufc\_faam\_20090727\_r0\_b471\_064959\_1hz.avi  
 faam-video-ufc\_faam\_20090727\_r0\_b471\_075526\_1hz.avi  
 faam-video-ufc\_faam\_20090727\_r0\_b471\_085623\_1hz.avi  
 faam-video-ufc\_faam\_20090727\_r0\_b471\_095705\_1hz.avi

No Digital8 video recordings were made on this flight.

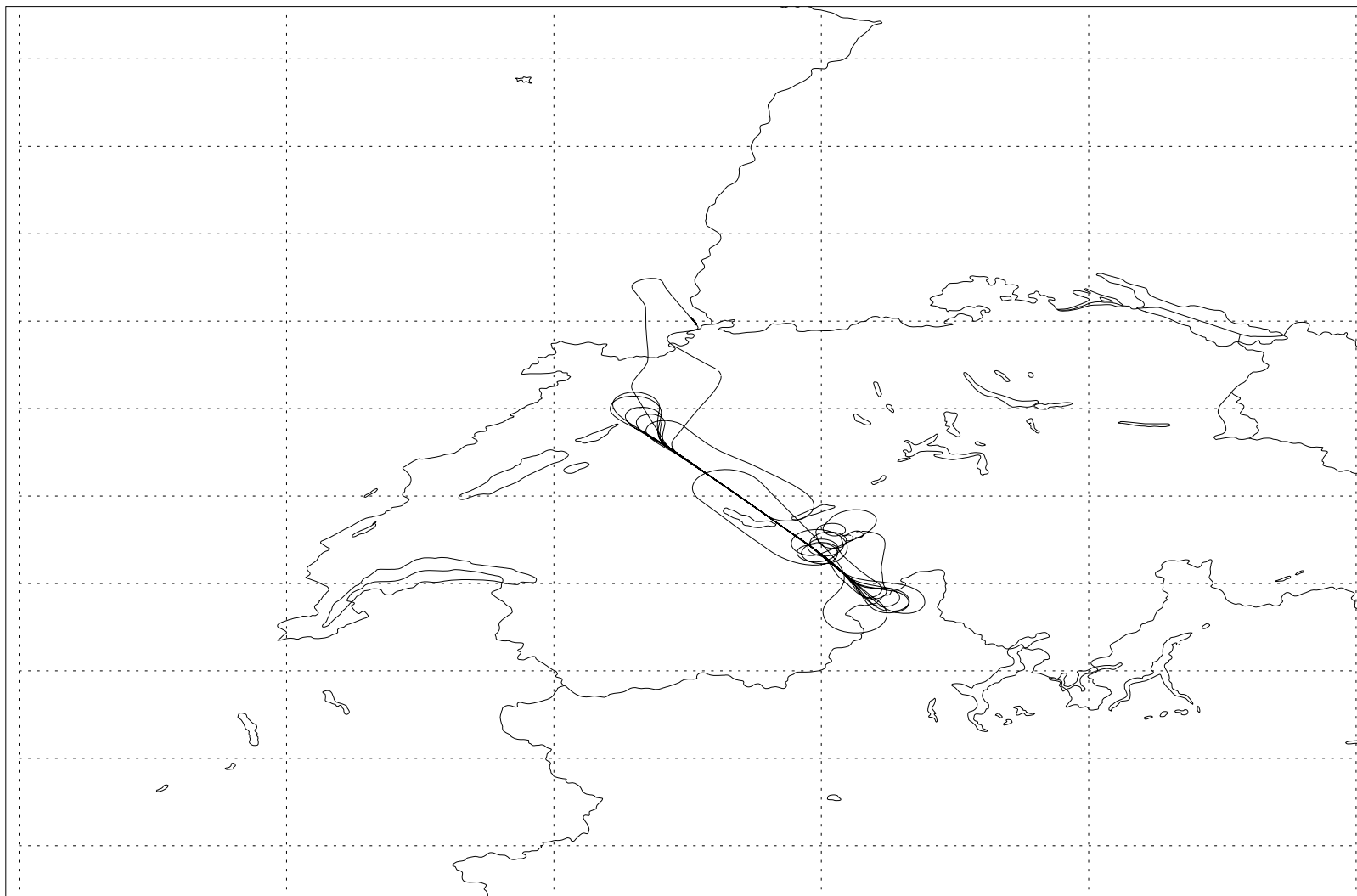
# FLIGHT SUMMARY

Flight No B471  
 Date: 27th July 2009  
 Project: Caviar  
 Location: Alps

Start Time ----	End Time ----	Event -----	Height (s) -----	Hdg ---	Comments -----
062819		ASP	0.81 kft	327	open
064434		T/O	3.2 kft	257	
064434	070608	Profile 1	3.4 - 28.0 kft	256	
070823	071721	Run 1	28.0 kft	143	
070855		note	28.0 kft	147	H20 zeroed
071545		Sonde 1	28.0 kft	147	
072113	072349	Run 2	28.1 - 28.0 kft	326	
072407	072638	Orbit 1	28.1 - 28.0 kft	342	40 degrees right
072706	072914	Orbit 2	28.1 - 28.0 kft	007	45 degree right
072956	074123	Profile 2	28.0 - 16.1 kft	054	Spiral interrupt
074144	074227	Profile 2	15.9 - 15.0 kft	143	restart
074555	075738	Run 3	15.1 - 15.0 kft	324	
075544		note	15.0 kft	316	heiman cal prog 10
075748	080128	Profile 3	15.0 - 19.0 kft	327	
080129	081225	Run 4	19.0 kft	148	
081436	081912	Profile 4	19.0 - 25.0 kft	238	
081913	082528	Run 5	25.0 kft	314	
082549	082937	Profile 5	25.0 - 28.0 kft	337	interrupt
082955	083312	Profile 5	28.0 - 30.0 kft	142	restart
083312	083848	Run 6.1	30.0 kft	147	
084251	085157	Run 6.2	30.0 kft	332	
084530		Sonde 2	30.0 kft	320	
084828		Sonde 3	30.0 kft	314	
085157	090602	Profile 6	30.5 - 34.9 kft	347	
091031	091925	Run 7.1	35.0 kft	311	
091056		Sonde 4	35.1 kft	319	
091554		Sonde 5	35.0 kft	315	
092337	093418	Run 7.2	35.1 - 35.0 kft	142	
093113		Sonde 6	35.0 kft	146	
093301		note	35.0 kft	151	MetOP overpass
093926	094354	Run 7.3	35.0 kft	346	
094150		Sonde 7	35.0 kft	324	
094548	100016	Profile 7	35.0 - 15.1 kft	216	spiral descent
100046	100146	Orbit 3	15.1 - 14.9 kft	021	60 degree right
100206	100310	Orbit 4	15.2 - 15.0 kft	055	60 degree right
100848	102232	Run 8	15.0 kft	311	
101930		Note	15.0 kft	313	Heiman cal prog 11
103712		Land	0.81 kft		

B471 03:39:58–10:38:43

GLNG\_PARA0581, GLAT\_PARA0580



## Sortie brief for FAAM

### CAVIAR detachment 2009

<b>Flight no:</b>	B471
<b>Proposed date:</b>	Monday 27 July 2009
<b>Prepared by:</b>	Stuart Newman
<b>Version no.:</b>	1.0, prepared 24 July 2009

<b>Aim:</b>	To sample intensively the water vapour structure of the atmosphere above the Jungfrauoch, and measure the radiative signature of the water vapour continuum. Coincident with an overpass of the European MetOp satellite.
<b>Airfield:</b>	Basel
<b>Flight location:</b>	Swiss Alps in vicinity of Jungfrauoch high altitude research station.
<b>Weather conditions required:</b>	Clear sky (or very nearly clear sky, preferably $\frac{1}{8}$ cloud or less) from surface to space.
<b>Dropsondes:</b>	6 required.

### Further sortie details

**Coordinates:** aim to fly straight and level runs between fixed coordinates

BADEP = 47° 1.6' N, 7° 25.5' E

(Jungfrauoch = 46° 32.9' N, 7° 59.1' E)

A = 46° 22.0' N, 8° 10.0' E

The runs are of approx. 10 mins duration, may be slightly longer at the lowest altitudes.

**Orientation:** Track approx. 142°T and reciprocal over Jungfrauoch and neighbouring glacier.

**Radiometers:** ARIES and TAFTS to coordinate their upward and downward views during the straight and level runs. SWS to scan a range of angles except during orbits.

**Note** that the following flight altitudes are examples only, and in practice these will be chosen by the mission scientist.

**Satellite overpass at 0933Z.**

## Sortie profile

No.	Item	Time	Cumulative time
1	Take off from Basel at 0640Z (0840L)		
2	Transit to arrive at BADEP at FL280	00:25	00:25
3	Perform straight and level run (SLR) from BADEP to A at FL280, drop one sonde	00:15	00:40
4	Reposition from A to the Jungfrauoch	00:05	00:45
5	Perform two orbits with angle of bank greater than SZA	00:10	00:55
6	Perform spiral descent from FL280 to FL150 over the Jungfrauoch at 1000 ft/min	00:15	01:10
7	Reposition from Jungfrauoch to A	00:05	01:15
8	Perform SLR (A to BADEP) at FL150	00:15	01:30
9	Climbing turn to FL190, rate of climb 1000 ft/min or less	00:05	01:35
10	Perform SLR (BADEP to A) at FL190	00:10	01:45
11	Climbing turn to FL240, rate of climb 1000 ft/min or less	00:05	01:50
12	Perform SLR (A to BADEP) at FL240	00:10	02:00
13	Climbing turn to FL300, rate of climb 1000 ft/min or less	00:10	02:10
14	Perform SLR (A to BADEP) at FL300, drop two sondes	00:10	02:20
15	Straight climb (BADEP to A) to FL350, rate of climb 1000 ft/min or less	00:20	02:40
16	Perform SLR (A to BADEP) at FL350, drop two sondes. Aim to coincide with <b>MetOp overpass at 0933Z.</b>	00:15	02:55
17	Procedural turn for reciprocal run	00:05	03:00
18	Reciprocal SLR (BADEP to A) at FL350, drop one sonde	00:10	03:10
19	Reposition from A to JFJ	00:05	03:15
20	Perform spiral descent from FL350 to FL150 over the Jungfrauoch at 1000 ft/min	00:20	03:35
21	Perform two orbits with angle of bank greater than SZA	00:10	03:45
22	Reposition from Jungfrauoch to A	00:05	03:50
23	Perform SLR (A to BADEP) at FL150	00:15	04:05
24	Return to Basel	00:15	04:20

## **Mission scientist debrief for CAVIAR flight B471 on 27 July 2009**

### **S. M. Newman**

#### **Debrief**

This flight was planned to investigate the radiative signature of the water vapour continuum, in coordination with solar-tracking FTS measurements performed by NPL at the Jungfraujoch high-altitude observatory. The high level runs were timed to coincide with a very close overpass of the MetOp satellite.

On take-off from Basel conditions were largely clear, with some cloud on the horizon to the northwest due to a frontal band moving in. There *appeared* to be a very thin veil of cirrus looking towards the sun, but it was very difficult to determine this with confidence.

A first run (following the usual BADEP way point to the Italian border route via the Jungfraujoch) at FL280 was accompanied by a sonde drop which revealed a dry atmosphere at all levels. An extensive sheet of stratocumulus was present south of the mountains, with largely clear conditions to the north. Orbits (40° and 45°) were followed by a spiral descent over the Jungfraujoch down to FL150 which confirmed the dryness of the atmosphere (generally much less than 80% RH).

A series of runs at ascending levels of FL150, FL190, FL250 and FL300 (with two dropsondes) were carried out in clear air. The visibility was good, with occasional wisps of cirrus seen above.

A climb to FL350 was accompanied by a moistening of the atmosphere, with two runs and four sonde drops at this level. The MetOp overpass at 0933Z occurred near the end of the second run, with apparently good clear sky conditions. A third run at FL350 was terminated early, followed immediately by a spiral descent initially offset from the Jungfraujoch.

Orbits (at 60°) at FL150 and a final run (remaining clear skies) at this level completed the science.

#### **Summary**

This was a successful satellite overpass sortie which should be valuable for IASI research. Apart from wisps of cirrus the clear sky conditions were ideal. ARIES and TAFTS (early in the flight) recorded good data.

#### **Instrument issues**

TAFTS ran out of helium mid-way through the flight, so data are only available for the early runs. The MARSS laptop crashed during the final spiral descent, with interruption to recorded data.

# Aircraft Scientist's Log

Flight No **B471**  
FAAM © 2004

Date **27/7/2009**

Page **1** of **2**

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
064434	TAKE-OFF				
065830	P↑	FL220	143	46°42, 7°42	Approaching Jungfrauoch; clear of cloud to northwest, sheet of SC beyond mountains. Veil of something towards the sun?
0707	P↑	FL280			Some cloud on horizon to northwest, largely clear at all levels around us
070820	R1	FL280	142	47°8, 7°24	Towards sun appears to be <u>very</u> thin veil of cirrus
071530					Dropsnide delayed by 1 minute
071545					Dropsnide #1
071721	end R1				Extensive sheet of stratocumulus south of mountains
072113	R2	FL280	327	46°18, 8°6	T-32.6, Td-48.2°C (Tephigram dry at all levels solar)
072349	end R2				(Short run over JFS) into 40° orbits
0727					2nd orbit 45°, SZA 57°
072956	P2	FL280 ↓			Spiral descent over Jungfrauoch
					60-80 comb PCASP at FL280, down to ~20-20 at FL250
074555	R3	FL150			Very dry on descent, largely < 80% RH
0758 <del>36</del>	end R3				MAXSS reports moistening of atm towards BADEP
080129	R4	FL190			Looks clear above + below, although again looking towards sun seems to be some milkiness and structure
081225	end R4				
081913	R5	FL250			T-24.0 Td-43.5
082510	"	"	313	47°8 7°24	Cirrus to left + low cloud approaching from west at end of run near BADEP
0831	P↑	FL290			140cc PCASP, CPC higher at this level
		FL300	146		Short run towards A
0838		"			Spike in PCASP, correlated with CPC + chemistry (O3 and CO)
		FL300	326	46°24, 8°6	T-37.3, Td-51.7 TAFS has run out of helium
084530					Dropsnide #2

# Aircraft Scientist's Log

Flight No **B.471**.....  
FAAM © 2004

Date **27/7/2009**.....

Page **2** of **2**.....

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
084615	(R6)	FL300	314	46°36', 7°34'	Good visibility, clear above + below
084820		"			Just coming under small patch of Cirrus
084828		"			Dropsonde #3
085151	end R6	FL300 (↓)		47°8', 7°24'	Occasional wisps of Cirrus above
0905		FL347↑			Moistening at higher levels T-49.8, Td-52.8°C
091032	R7.1	FL350	317		T-51.0, Td-54.9°C
091056		"			Dropsonde #4
091554					Dropsonde #5 approaching BASEP/airway
091922	end R7.1	FL350			Conditions still good, appears clear above + below
092337	R7.2	FL350	138		Thin veil of Cirrus? Hard to tell T-50.4, Td-57.4
093114					Dropsonde #6
0933					MetOp overpass near end of run ~ A
0939	R7.3	FL350	330	46°24', 8°0'	Short run towards BASEP
094153	"	"	323	46°36', 7°34'	Dropsonde #7
					This track to east of original track
094350	end R7.3	"			Terminated early T-49.6, -59.1
0948	P ↓	FL323			Spinal descent, initially offset from Jungfraujoch
0955					Crash for MASS laptop, data interruption
1000	end P	FL150		46°3', 8°0'	Into 60° orbits
100848	R8	FL150	321	46°16', 8°6'	T-3.5, Td-13.6°C Hazy, aerosol layer?
102232	end R8	FL150 ↓			Some cloud/haze ahead, but remained clear for run



# Cloud Physics Flight Log B471

Date: 27/07/09	Operator:KFT	DRS Time: 03:45	DAU1 Time: N/A	DAU2 Time: SET + 0	AUX1 Time: SET	AUX2 Time: SET
----------------	--------------	-----------------	----------------	--------------------	----------------	----------------

## DAU2 Disk space? Y

	CDP		PCASP SPP-200		CIP-100		2DC		SID2			
Operated?	Y		Y		Y		Y		N			
Pre-flight checks	Ref V:	4.5	Vref (>7V):	7.7	El#1	1.84	El#1 V (>1):	1.5	Comms?:			
	Data TX?	Y	Sample flow	OK	El#32	2.93	El#32 V (>1):	1.8				
			Sheath flow	OK	El#64	1.52						
			Spectra ok?	Y								

Just after take-off	Are SAMPLE and RECORD buttons on PADS both green?	Y	Are all heaters on? (Check ammeters and CIP dummy box heater switch).	Y
	Are all PADS instruments enabled and updating?	Y		

NOTE that CTRL+T will insert the current time where the cursor is as long as the cursor is a cursor and not a selected box.

GMT	Height	CDP		PCASP SPP-200		CIP-100		2DC		Habit	SID2	Comments
		#/cc	MVD	#/cc	MVD	#/cc	Mean R	#/L	Max R			
06:46												All heaters on. LWC on.
07:06:09	FL280	0		80	0.2	0		0				LWC DAT observed just before START R1
07:21:46	FL280	0		40	0.14	0		0				
07:23:30	FL280											LWC DAT obs
07:30:21	FL280	0		40	0.26							PROFILE 2
07:30:56	FL270			40	0.26							
07:32:04	FL260	0		20	0.16							
07:33:25	FL250	0		20	0.16							
07:34:35	FL240	0		25	0.25							
07:35:04	FL230	0		32	0.17							
07:36:02	FL220	0		28	0.25							
07:37:11	FL210	0		35	0.19							
07:39:01	FL190			41	0.22							
07:39:40	FL180	0		44	0.27							
07:41:25	FL160			30	0.17							
07:42:32	FL150			25	0.15							

# Cloud Physics Flight Log B471

GMT	Height	CDP		PCASP SPP-200		CIP-100		2DC		Habit	SID2	Comments
		#/cc	MVD	#/cc	MVD	#/cc	Mean R	#/L	Max R			
07:43:56	FL150											LWC DAT obs
07:49:44	FL150			12	0.17							
07:54:12	FL150			80	0.18							SMALL PLUME? NO CHANGE IN O3, CO CAL.
07:57:58	FL150			25	0.2							START PROFILE 3
07:58:53	FL160			27	0.16							
07:59:48	FL170			28	0.21							
08:00:43	FL180			26	0.21							
08:01:43	FL190			37	0.19							COINCIDENT RISE IN O3
08:04:33	FL190											LWC DAT OBS
08:10:20	FL190			35	0.25							JFJ
08:12:31	FL190			27	0.25							END RUN 4
08:14:39	FL190			25	0.21							START PROFILE 4
08:15:38	FL200			18	0.23							
08:16:26	FL210			10	0.16							
08:17:10	FL220			15	0.33							
08:17:50	FL230			16	0.20							
08:18:25	FL240			19	0.32							
08:19:14	FL250			39	0.19							
08:21:27	FL250			35	0.20							LWC DAT OBS
08:26:41	FL260			11	0.21							
08:28:17	FL270			37	0.18							
08:29:39	FL280			24	0.23							
08:30:50	FL285			140	0.18							PEAK IN O3, CO TOO, NOT NEPHS.
08:32:10	FL290			15	0.16							
08:33:24	FL300			10	0.17							END PROFILE 5, START RUN
08:33:49												LWC DAT OBS
08:36:44	FL300			50	0.18							
08:38:25	FL300			175	0.23							PEAK IN O3,M CO TOO, NOT NEPHS.
08:40:07	FL300			190	0.14							AND AGAIN.
08:43:30	FL300			125	0.25							
08:45:27	FL300			33	0.17							
08:47:41												LWC DAT OBS
08:51:55	FL300			34	0.23							
08:54:02	FL310			19	0.23							
08:56:52	FL320			10	0.13							
09:05:08	FL350			25	0.26							Pcasp varying much more over mountains than plain. Lwc dat

GMT	Height	CDP		PCASP SPP-200		CIP-100		2DC		Habit	SID2	Comments
		#/cc	MVD	#/cc	MVD	#/cc	Mean R	#/L	Max R			
09:13:28	FL350			35	0.2							PCASP CH1 NOISE AFFECTING #/CC STRONGLY.
09:18:53	FL350			NOISE								NOISE AFFECTING CH1 AND 2. 3000/CC
09:23:39	FL350			NOISE								LESS NOISE BUT STILL NOISY 500/CC.
09:27:34												LWC DAT OBS
09:35:07	FL350			NOISE								NOISE ONLY CH1 AND NEARER 100/CC
09:41:59	FL350			NOISE								NOISE AROUND 5000/CC AGAIN. CH1, 2 AND 3.
09:46:56	FL340			55								NOISE MUCH LESS, CH1 ONLY
09:47:41	FL330			11	0.15							OCNL NOISE CH1 ONLY
09:48:51	FL310			36	0.12							ISOL NOISE CH1 ONLY
09:49:31	FL300			22	0.26							
09:50:36	FL280			80	0.24							NOISE NOW GONE.
09:51:46	FL260			23	0.15							
09:52:38	FL250			25	0.18							
09:53:45	FL230			45	0.18							
09:54:51	FL220			55	0.16							
09:55:17	FL210			70	0.27							
09:56:43	FL190			50	0.18							
09:58:00	FL180			180	2.69							PARTICLES COVERING MORE OF SIZE RANGE. COINCIDENT O3 DIP THIS TIME.
09:59:15	FL160			117	2.5							
10:00:19	FL150			65	0.22							END PROFILE
10:07:13	FL150			25	0.15							LWC DAT OBS
10:17:55	FL150			25	0.24							
10:23:58	FL135			143	0.21							
10:24:42	FL120			333	0.21							
10:28												HEATERS OFF, LWC OFF

**Post flight**

Instrument	Diagnostics		Brief report on instrument performance
2DC	EI#1:	1.4	NO NOISE
	EI#32:	1.7	

<b>PCASP SPP-200</b>	Ref V:	7.4	NOISE IN CHANNEL ONE FL330-FL350, OCCASIONALLY IN CHANNEL 2 ALSO.
	Flow:	OK	
<b>CDP</b>	Laser V:	4.0	
<b>Rack Equipment</b>			Please note SEADAS disk space remaining.0.8gb

<b>Flight No.</b>	B471	<b>Date</b>	27/07/2009	<b>Operator</b>	Doug Anderson	<b>Page No.</b>	1 of 1
-------------------	------	-------------	------------	-----------------	---------------	-----------------	--------

[illegible]

# Flight:

B471

## KEY

Not Fitted

Fitted, Not Operated

Duff Data

Minor Problem

OK

### Thermometers

Cabin Temperature:

Heimann:

Deiced Temp:

Non-deiced Temp:

### Hygrometers

FWVS:

Buck CR2:

General Eastern:

Johnson Williams:

Nevzorov:

Total Water Probe:

### Cameras

Downward Facing:

Forward Facing:

Rearward Facing:

Upward Facing:

### Navigation + Aircraft

Cruciform GPS:

GIN Applanix:

INU Honeywell:

Radar Altimeter:

RVSM IAS:

RVSM Static Pressure:

XR5 GPS:

### Misc Core

HORACE:

AMTG:

AVAPS:

Cabin Pressure:

Printer:

S9 Static Pressure:

Satcom C:

Satcom H (VIRC):

Turb Centre-Static:

Turb Left Right:

Turb Up-Down:

Turb Horizontal Chk:

Turb Vertical Chk:

Weather Radar:

### DLUs:

DLU AERACK:

DLU BBR Lower:

DLU BBR Upper:

DLU Core Chem:

DLU Core Consoles:

DLU Port Aft:

DLU Port Fwd:

DLU Stbd Fwd:

### Radiometers

#### Lower:

BBR (clear) Lower:

BBR (IR) Lower:

BBR (red) Lower:

#### Upper:

BBR (clear) Upper:

BBR (IR) Upper:

BBR (red) Upper:

ARIES:

DEIMOS:

IR Camera:

JNO2 Lower:

JNO2 Upper:

JO1D Lower:

JO1D Upper:

MARSS:

SHIMS Lower:

SHIMS Upper:

SWS:

TAFTS:

### Cloud Probes

2DC:

2DP:

FFSSP:

PCASP:

PCASP SPP-200:

2DS:

ADA:

CAPS:

CCN:

CDP (fuselage):

CDP (Canister):

CIP 100 (PIP):

CIP 25 (CIP):

CPI:

CVI (Inlet):

CVI PCASP-X:

CVI Ly-A Hygro:

FSSP (UMan):

SID1:

SID2:

SID3:

### Aerosol

CPC 3025A:

CPC 3786 H2O:

Filters 47mm:

Filters 90mm:

Neph - Dry:

Neph - Wet:

PSAP:

AMS:

CPC (AMS):

SMPS (AMS):

CPC 3010A (CVI):

INC:

Mini-LIDAR:

SP2:

UHSAS:

VACC:

### Chemistry

CO Aerolaser 5002:

NOx TE42C:

Ozone TE49C:

Ozone TE49:

SO2 TE43C:

TDLAS (NIR) CH4:

TDLAS (NIR) CO2:

FAGE:

Formaldehyde:

NOx FAAM:

NOxy:

ORAC:

PAN:

PERCA:

Peroxide:

PTRMS:

TDLAS (1C):

WAS Bags:

WAS Bottles:

### Misc Non-Core

CASI/ATM:

LIDAR (big):

LTI:

SAW Hygrometer:



## Faults / Incidents Log

**Flight No. B471**

**Date: 27/7/09**

### Instruments

1. RFC not operational
2. TAFTS ran out of Helium
3. PCASP suffered from cold

### Aircraft

- 1.
- 2.
- 3.

### Satcom-H Calls

nil

### Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c)  $\frac{1}{4}$  full or more d) Ice present
2. Emptied by:
3. Dried by:

## Pre-Flighter's Log

Date: 27/7/09

Flight No: B 471

Pre-Flighter: *Am*

No.	✓ or x	Location	Action	Comments
1	<input type="checkbox"/>	Hangar	Collect spanners	Core Chem - 9/16" & 11/16"
<b>Aircraft Cabin: Power-up</b>				
2	<input checked="" type="checkbox"/>	Core Chemistry	Gases x 3 ON	
3	<input checked="" type="checkbox"/>	Cabin	All Racks Checked	
4	<input checked="" type="checkbox"/>	Core Chemistry	Instruments Checked OK	
5	<input checked="" type="checkbox"/>	Core Chemistry	CO Flows Checked OK	
6	<input checked="" type="checkbox"/>	Aft CorCon	All reqd CBs made	
7	<input checked="" type="checkbox"/>	Fore CorCon	CBs made, PCs ON	
8	<input checked="" type="checkbox"/>	HORACE	Optical Disk loaded	
9	<input checked="" type="checkbox"/>	HORACE	Recording data	
10	<input checked="" type="checkbox"/>	HORACE	DLU Status Checked	
11	<input checked="" type="checkbox"/>	HORACE	HORACE Status Checked	
12	<input checked="" type="checkbox"/>	Satcom H	Power LED ON	
13	<input checked="" type="checkbox"/>	Nevzorov	Checked and OFF	
14	<input checked="" type="checkbox"/>	Cameras Pictures	Checked x 4 OK	
15	<input checked="" type="checkbox"/>	Video Laptop	Checked onboard	
16	<input checked="" type="checkbox"/>	FWVS	Set up & check on AUTO	MO
17	<input checked="" type="checkbox"/>	Delced Rosemount	Heater Checked then OFF	
18	<input checked="" type="checkbox"/>	Heimann	Calibration Checked	
19	<input checked="" type="checkbox"/>	TWC	Fitted & signals checked	
20	<input checked="" type="checkbox"/>	GE	Balance checked then back to DP	
21	<input checked="" type="checkbox"/>	GPS (XR5M)	Checked	
22	<input checked="" type="checkbox"/>	Satcom C	Checked	
23	<input checked="" type="checkbox"/>	Miss. Sci Laptop	Checked Onboard	In cockpit
24	<input checked="" type="checkbox"/>	CNC	Butanol filled	
25	<input checked="" type="checkbox"/>	Dry Neph	Power up & Zero Cal	
26	<input checked="" type="checkbox"/>	PSAP	Pre-flight log actions complete	
27	<input checked="" type="checkbox"/>	CGPS	CBs and PC ON	
28	<input checked="" type="checkbox"/>	3786 CPC	DI Checked / Topped up	

No.	✓ or x	Location	Action	Comments
29	<input checked="" type="checkbox"/>	CCN Water	Supply filled / Drain empty	
30	<input checked="" type="checkbox"/>	CCN SS cols A & B	Set to manual A0.2, B0.1	
31	<input checked="" type="checkbox"/>	CCN Pressure	Normally set to 650mb	
32	<input checked="" type="checkbox"/>	CCN Flow Ratios	A & B = 10 ± 0.3	
33	<input checked="" type="checkbox"/>	3786 CPC	Drained	
34	<input checked="" type="checkbox"/>	CPC Laptop	AIM Software set up	
<b>External Checks</b>				
35	<input checked="" type="checkbox"/>	Turb Probe	Clean if reqd, Photo taken	
36	<input checked="" type="checkbox"/>	JW	Cleaned & Checked	
37	<input checked="" type="checkbox"/>	DI Rosemount	Cleaned & Checked	
38	<input checked="" type="checkbox"/>	NDI Rosemount	Cleaned & Checked	
39	<input checked="" type="checkbox"/>	Nevzorov	Cleaned/windings checked	
40	<input checked="" type="checkbox"/>	GE	Cleaned & Checked	
41	<input checked="" type="checkbox"/>	Lower BBRs	Domes cleaned/checked	
42	<input checked="" type="checkbox"/>	WAS Bottles	No. fitted and position.	
43	<input checked="" type="checkbox"/>	Camera Windows	Cleaned	
44	<input checked="" type="checkbox"/>	Heimann	Lens checked OK	
45	<input checked="" type="checkbox"/>	TWC Cover	Fitted if required	
46	<input checked="" type="checkbox"/>	All other covers	Removed	
47	<input checked="" type="checkbox"/>	Pre-flight Bag	Returned to hold	<b>** Check no butanol**</b>
48	<input type="checkbox"/>	Tools	Check ALL in Toolkit	
49	<input type="checkbox"/>	Tools	Avalon informed	
50	<input type="checkbox"/>			
<b>Avalon Checks</b>				<b>Signed</b>
51	<input type="checkbox"/>	Upper BBRs Checked & Cleaned		
52	<input type="checkbox"/>	iCEX applied		
53	<input type="checkbox"/>	Turb Probe - Traps emptied, detail contents -		a)Nil b)1-2 drops c)1/4 full or more



# ARIES flight log

Flight: ~~B45~~ B471

page 1 of 2

Date: 27/07/09 Operator(s): D. TIDDEMAN

Res: 1

Gain A: 2 B: 2

Loc./Notes: CAUIAN SWITZERLAND

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". View: mirror angle.

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
							CN2
							Carin Nadir Zenith 30s
							(CH30s, N30s, 280s) x 2
							C2P
							Carin Profile Zen
							(CH20s, Z20s) x 2
							N30
							Nadir Long Run 30sec
							(CH30s, N30s) x 327
070840	FL280	CN2		0	71	31	Start
071805	FL280	CN2		0	71	31	Stop
072110	FL280	CN2		0	71	31	Start
072340	FL280	CN2		0	71	30	Start Stop
072405	FL280 Orbit	C2P		0	71	30	Start
072956	Special descent	"		0	71	31	Spiral down
074230	FL150	"		0	71	30	Stop script
074319	FL150	CN2		0	71	31	Start script
074440	FL150	CN2		0	71	31	Stop
074556	FL150	CN2		0	71	30	Start
075747	FL150	CN2		0	71	31	Stop
080140	FL190	CN2		0	71	31	Start
081313	FL190	CN2		0	71	31	Stop
081914	FL250	CN2		0	71	31	Start
082530	FL250	CN2		0	71	30	Stop
083314	FL300	CN2		0	71	30	Start
083924	FL300	CN2		0	71	31	Stop
084250	FL300	CN2		0	71	31	Start
085157	FL300	CN2		0	71	31	Stop
091035	FL300	CN2		0	71	30	Start
091130	FL350	CN2		0	71	31	Stop
092339	FL350	CN2		0	71	30	

# ARIES flight log

**Flight:** 3471

page 2 of 2

**Date:** 27/07/09 **Operator(s):** D. TIDDEMAN

**Res:** 1

**Gain A:**  $\approx$  **B:**  $\approx$

**Loc./Notes:** SWISS CAVALIER

**Scans:** either “[IGMs]X[co-adds]”, or “[stop DRS time]” if in start/stop, or “[macro name]”. **View:** mirror angle.

[illegible]

<b>Microwave Radiometers FLIGHT LOG</b>		Date	270709	Flight	B471	log pages
Operator(s)	JB	Campaign	CAVIAR			
Departure	Basel	Arrival	Basel			

### System start MARSS

Visual pod inspection						•
Close 3 SSP circuit breakers						•
Close all MARSS circuit breakers						•
FERA on	at time					03:51
Temperature controller initial temps	Ch16	18°C	Ch	18°C	Ch18	18°C
Temperature controller set points		54°C	17	58°C	-20	40°C
MARSS CPU on	at time					04:03
Initial target temperatures	Hot	289	Cold	287		
Target heating						•
*** CHECK SCAN HEAD CLEAR ***						•
Scanning on (LMD box)	at time					05:04 test
Scan indication	Monitor •					Visual •

### Deimos

Close all Deimos circuit breakers						
Turn on Deimos CPU						
*** CHECK SCAN HEAD CLEAR ***						
Start Deimos Software	at time					
Initial target temperatures	Hot		Cold			
Target heating						
Scan indication	Monitor					Visual
Weather	Cloud				Precip	
	Surface				Pressure	
	Other					

### System functionality check

(after initial system warmup, approx 1 hour)

PC to DRS Time error	$t_{PC}=t_{DRS} +$	0	at time	06:21:00		
Brightness temps 'sensible'						•
Target temps	MARSS:	Hot	344.5	Cold	297.0	
	Deimos:	Hot		Cold		
Channel gains 'sensible'	Ch1 A (-)	Ch3 A (-)	Ch1 B (-)	Ch3 B (-)		
	Ch16 (40-44)	Ch17 (45-49)	Ch18 (40-44)	Ch19 (40-44)	Ch20 (44-48)	
	38.43	31.92	39.33	42.28	42.72	

### Power changeover

POWER CHANGEOVER		
Headset on before start		•
Listen to engine start sequence	4, 3, 2, 1.	•
LMD off (3 switches, bottom to top)		•
Exit Deimos Software (x)		
POWER CHANGEOVER		
LMD on (3 switches, top to bottom)	then pushbutton	•
Restart Deimos Software		
System running again		at time

Flight #	B	Date	Operator(s)			log page	2	of	2
Time	Run id	Alt/FL	Remarks					Sys	
08:10:50	R4	FL190	Dip in BT passing over observatory. Chan 16						
08:37ish	R6.1	FL300	Blip on Chan 16 coincides with cloud physics and chemistry.						
08:48	R6.2	“”	Blip on chan 16						
09:56	P7		Laptop crashed, immediate recovery.						
10:46:10	Taxi		MARSS pc 10:16:18						

## B471\_SWS\_SHIMS\_EventLog

Time	Mode	Value	Unit	Event
04:14:03.44	---	-	-	-
04:14:03.45	---	-	-	+++ SOFTWARE START/RESTART +++
04:14:03.45	---	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR /	Comment	+++		
04:14:03.45	---	-	-	+++ Flight no. B471
04:14:03.45	---	-	-	-
04:14:07.61	SWS	100	-	Sample period changed from 250ms to 100ms.
04:14:10.52	SWS	-	-	Telescope motor initialised.
04:14:12.71	USH	100	-	Sample period changed from 250ms to 100ms.
04:14:15.66	SWS	-	-	Initialization: VIS OK NIR OK
04:14:17.04	USH	-	-	Initialization: VIS OK NIR OK
04:14:18.70	LSH	100	-	Sample period changed from 250ms to 100ms.
04:14:20.70	LSH	-	-	Initialization: VIS OK NIR OK
04:14:26.03	LSH	-	-	5 NIR int.time changed from 5ms to 5ms.
04:14:28.24	LSH	-	40	- VIS int.time changed from 5ms to 40ms.
04:14:28.25	LSH	-	-	40 NIR int.time changed from 5ms to 40ms.
04:14:31.11	USH	-	-	5 NIR int.time changed from 5ms to 5ms.
04:14:33.20	USH	-	40	- VIS int.time changed from 5ms to 40ms.
04:14:33.21	USH	-	-	40 NIR int.time changed from 5ms to 40ms.
04:14:36.70	SWS	-	-	5 NIR int.time changed from 5ms to 5ms.
04:14:38.77	SWS	-	40	- VIS int.time changed from 5ms to 40ms.
04:14:38.77	SWS	-	-	40 NIR int.time changed from 5ms to 40ms.
04:14:41.68	USH	-	40	40 Manual scene recording started.
04:14:41.68	LSH	-	40	40 Manual scene recording started.
04:14:41.69	SWS	-	40	40 Manual scene recording started.
04:14:44.40	---	-	-	Reset shutters.
04:14:50.19	USH	-	40	40 Dark measurement started.
04:14:50.27	SWS	-	40	40 Dark measurement started.
04:14:50.29	LSH	-	40	40 Dark measurement started.
04:14:50.85	LSH	-	40	40 Dark measurement started.
04:14:51.05	USH	-	40	40 Manual scene recording started.
04:14:51.26	SWS	-	40	40 Manual scene recording started.
04:14:51.70	LSH	-	-	- Idling
04:14:53.01	LSH	-	40	40 Dark measurement started.
04:14:53.03	USH	-	40	40 Dark measurement started.
04:14:53.10	SWS	-	40	40 Dark measurement started.
04:14:53.86	LSH	-	-	- Idling
04:14:54.13	USH	-	40	40 Manual scene recording started.
04:14:54.34	SWS	-	40	40 Manual scene recording started.
04:14:56.42	LSH	-	40	40 Dark measurement started.
04:14:56.47	USH	-	40	40 Dark measurement started.
04:14:56.54	SWS	-	40	40 Dark measurement started.
04:14:57.25	LSH	-	-	- Idling
04:14:57.48	USH	-	40	40 Manual scene recording started.
04:14:57.66	SWS	-	40	40 Manual scene recording started.
04:15:00.87	LSH	-	40	40 Manual scene recording started.
04:15:02.51	USH	-	-	- Idling
04:15:02.52	SWS	-	-	- Idling
04:15:02.55	LSH	-	-	- Idling
04:15:06.57	SWS	0.0	-	- Telescope sent to -6.000
04:15:07.11	SWS	-6.0	-	- Telescope stopped.
04:15:15.11	SWS	-6.0	-	- Telescope sent to 0.000
04:58:03.33	USH	-	40	40 Manual scene recording started.
04:58:03.33	LSH	-	40	40 Manual scene recording started.
04:58:03.35	SWS	-	40	40 Manual scene recording started.
04:58:28.03	---	-	-	Reset shutters.
04:58:43.33	LSH	-	40	40 Dark measurement started.
04:58:43.35	USH	-	40	40 Dark measurement started.
04:58:43.40	SWS	-	40	40 Dark measurement started.
04:58:44.21	LSH	-	40	40 Manual scene recording started.
04:58:44.40	USH	-	40	40 Manual scene recording started.
04:58:44.61	SWS	-	40	40 Manual scene recording started.
04:58:45.46	SWS	-	40	40 Dark measurement started.
04:58:45.46	LSH	-	40	40 Dark measurement started.
04:58:45.53	USH	-	40	40 Dark measurement started.
04:58:46.34	SWS	-	40	40 Manual scene recording started.
04:58:46.59	LSH	-	40	40 Manual scene recording started.



04:58:46.78	USH	-	-	40	40	Manual scene recording started.
04:58:48.19	SWS	-	-	40	40	Dark measurement started.
04:58:48.25	USH	-	-	40	40	Dark measurement started.
04:58:48.30	LSH	-	-	40	40	Dark measurement started.
04:58:49.04	SWS	-	-	40	40	Manual scene recording started.
04:58:49.31	USH	-	-	40	40	Manual scene recording started.
04:58:49.54	LSH	-	-	40	40	Manual scene recording started.
05:14:13.59	---	-	-	-	-	Reset shutters.
05:14:18.61	USH	-	-	40	40	Dark measurement started.
05:14:18.66	LSH	-	-	40	40	Dark measurement started.
05:14:18.67	SWS	-	-	40	40	Dark measurement started.
05:14:19.50	USH	-	-	40	40	Manual scene recording started.
05:14:19.71	LSH	-	-	40	40	Manual scene recording started.
05:14:19.93	SWS	-	-	40	40	Manual scene recording started.
05:14:21.08	LSH	-	-	40	40	Dark measurement started.
05:14:21.14	USH	-	-	40	40	Dark measurement started.
05:14:21.16	SWS	-	-	40	40	Dark measurement started.
05:14:21.80	SWS	-	-	40	40	Dark measurement started.
05:14:21.97	LSH	-	-	40	40	Manual scene recording started.
05:14:22.20	USH	-	-	40	40	Manual scene recording started.
05:14:22.65	SWS	-	-	-	-	Idling
05:14:24.00	SWS	-	-	40	40	Dark measurement started.
05:14:24.09	USH	-	-	40	40	Dark measurement started.
05:14:24.09	LSH	-	-	40	40	Dark measurement started.
05:14:24.84	SWS	-	-	-	-	Idling
05:14:25.09	USH	-	-	40	40	Manual scene recording started.
05:14:25.31	LSH	-	-	40	40	Manual scene recording started.
05:14:26.44	SWS	-	-	40	40	Manual scene recording started.
05:14:28.11	SWS	-	-	-	-	Idling
05:14:28.16	USH	-	-	-	-	Idling
05:14:28.16	LSH	-	-	-	-	Idling
05:27:14.71	USH	-	-	40	40	Manual scene recording started.
05:27:14.71	LSH	-	-	40	40	Manual scene recording started.
05:27:14.73	SWS	-	-	40	40	Manual scene recording started.
05:27:17.02	---	-	-	-	-	Reset shutters.
05:27:20.62	USH	-	-	40	40	Dark measurement started.
05:27:20.64	LSH	-	-	40	40	Dark measurement started.
05:27:20.71	SWS	-	-	40	40	Dark measurement started.
05:27:21.46	USH	-	-	40	40	Manual scene recording started.
05:27:21.98	SWS	-	-	40	40	Manual scene recording started.
05:27:22.74	LSH	-	-	40	40	Manual scene recording started.
05:27:22.92	USH	-	-	40	40	Dark measurement started.
05:27:22.95	SWS	-	-	40	40	Dark measurement started.
05:27:23.08	LSH	-	-	40	40	Dark measurement started.
05:27:23.41	SWS	-	-	40	40	Dark measurement started.
05:27:23.78	USH	-	-	40	40	Manual scene recording started.
05:27:24.19	LSH	-	-	40	40	Manual scene recording started.
05:27:24.41	SWS	-	-	-	-	Idling
05:27:32.92	---	-	-	-	-	*** microtops comparison
05:27:35.01	SWS	-	-	40	40	Manual scene recording started.
05:31:01.93	---	-	-	-	-	*** end of comp
05:31:03.74	LSH	-	-	40	40	Dark measurement started.
05:31:03.78	USH	-	-	40	40	Dark measurement started.
05:31:03.80	SWS	-	-	40	40	Dark measurement started.
05:31:04.59	LSH	-	-	40	40	Manual scene recording started.
05:31:04.84	USH	-	-	40	40	Manual scene recording started.
05:31:05.07	SWS	-	-	40	40	Manual scene recording started.
05:31:06.06	USH	-	-	40	40	Dark measurement started.
05:31:06.08	LSH	-	-	40	40	Dark measurement started.
05:31:06.09	SWS	-	-	40	40	Dark measurement started.
05:31:06.52	LSH	-	-	40	40	Dark measurement started.
05:31:06.76	SWS	-	-	40	40	Dark measurement started.
05:31:06.96	USH	-	-	40	40	Manual scene recording started.
05:31:07.51	LSH	-	-	-	-	Idling
05:31:07.77	SWS	-	-	-	-	Idling
05:31:08.19	USH	-	-	-	-	Idling
05:40:53.65	SWS	-	-	40	40	Manual scene recording started.
05:40:53.66	LSH	-	-	40	40	Manual scene recording started.
05:40:53.69	USH	-	-	40	40	Manual scene recording started.

05:40:54.64	LSH	-	-	40	40	Manual scene recording started.
05:40:54.71	USH	-	-	40	40	Manual scene recording started.
05:40:58.94	LSH	-	-	-	-	Idling
05:40:58.96	SWS	-	-	-	-	Idling
05:40:58.99	USH	-	-	-	-	Idling
06:15:56.30	SWS	-	-	40	40	Manual scene recording started.
06:15:56.31	LSH	-	-	40	40	Manual scene recording started.
06:15:56.31	USH	-	-	40	40	Manual scene recording started.
06:15:57.48	LSH	-	-	40	40	Manual scene recording started.
06:15:57.53	USH	-	-	40	40	Manual scene recording started.
06:16:23.13	---	-	-	-	-	Reset shutters.
06:16:27.25	LSH	-	-	40	40	Dark measurement started.
06:16:27.34	USH	-	-	40	40	Dark measurement started.
06:16:27.34	SWS	-	-	40	40	Dark measurement started.
06:16:28.64	LSH	-	-	40	40	Manual scene recording started.
06:16:28.92	USH	-	-	40	40	Manual scene recording started.
06:16:28.98	SWS	-	-	40	40	Manual scene recording started.
06:16:30.60	USH	-	-	40	40	Dark measurement started.
06:16:30.61	LSH	-	-	40	40	Dark measurement started.
06:16:30.74	SWS	-	-	40	40	Dark measurement started.
06:16:32.18	USH	-	-	40	40	Manual scene recording started.
06:16:32.33	LSH	-	-	40	40	Manual scene recording started.
06:16:32.57	SWS	-	-	40	40	Manual scene recording started.
06:16:38.47	LSH	-	-	-	-	Idling
06:16:38.51	USH	-	-	-	-	Idling
06:16:38.51	SWS	-	-	-	-	Idling
06:22:59.82	USH	-	-	40	40	Manual scene recording started.
06:22:59.82	LSH	-	-	40	40	Manual scene recording started.
06:22:59.85	SWS	-	-	40	40	Manual scene recording started.
06:23:01.36	SWS	-	-	40	40	Manual scene recording started.
06:23:02.31	---	-	-	-	-	Reset shutters.
06:23:06.96	SWS	-	-	40	40	Dark measurement started.
06:23:06.96	USH	-	-	40	40	Dark measurement started.
06:23:07.12	LSH	-	-	40	40	Dark measurement started.
06:23:08.40	SWS	-	-	40	40	Manual scene recording started.
06:23:08.67	USH	-	-	40	40	Manual scene recording started.
06:23:08.79	LSH	-	-	40	40	Manual scene recording started.
06:23:09.90	USH	-	-	40	40	Dark measurement started.
06:23:09.91	SWS	-	-	40	40	Dark measurement started.
06:23:09.97	LSH	-	-	40	40	Dark measurement started.
06:23:10.20	USH	-	-	40	40	Dark measurement started.
06:23:10.44	SWS	-	-	40	40	Dark measurement started.
06:23:11.72	LSH	-	-	40	40	Manual scene recording started.
06:23:12.04	USH	-	-	-	-	Idling
06:23:12.15	SWS	-	-	-	-	Idling
06:23:13.95	SWS	-	-	40	40	Manual scene recording started.
06:23:13.97	USH	-	-	40	40	Manual scene recording started.
06:47:41.93	---	-	-	-	-	Reset shutters.
06:47:47.38	SWS	-	-	40	40	Dark measurement started.
06:47:47.44	USH	-	-	40	40	Dark measurement started.
06:47:47.46	LSH	-	-	40	40	Dark measurement started.
06:47:47.90	USH	-	-	40	40	Dark measurement started.
06:47:48.29	SWS	-	-	40	40	Manual scene recording started.
06:47:48.68	LSH	-	-	40	40	Manual scene recording started.
06:47:48.96	USH	-	-	-	-	Idling
06:47:49.90	USH	-	-	40	40	Dark measurement started.
06:47:50.01	SWS	-	-	40	40	Dark measurement started.
06:47:50.02	LSH	-	-	40	40	Dark measurement started.
06:47:50.74	USH	-	-	-	-	Idling
06:47:51.01	SWS	-	-	40	40	Manual scene recording started.
06:47:51.24	LSH	-	-	40	40	Manual scene recording started.
06:47:52.51	USH	-	-	40	40	Manual scene recording started.
06:55:24.17	---	-	-	-	-	Reset shutters.
06:55:30.48	SWS	-	-	40	40	Dark measurement started.
06:55:30.51	LSH	-	-	40	40	Dark measurement started.
06:55:30.52	USH	-	-	40	40	Dark measurement started.
06:55:31.33	SWS	-	-	40	40	Manual scene recording started.
06:55:31.56	LSH	-	-	40	40	Manual scene recording started.
06:55:31.78	USH	-	-	40	40	Manual scene recording started.

06:55:32.84	SWS	-	-	40	40	Dark measurement started.
06:55:32.92	USH	-	-	40	40	Dark measurement started.
06:55:33.01	LSH	-	-	40	40	Dark measurement started.
06:55:33.41	USH	-	-	40	40	Dark measurement started.
06:55:33.77	SWS	-	-	40	40	Manual scene recording started.
06:55:34.23	LSH	-	-	40	40	Manual scene recording started.
06:55:34.40	USH	-	-	-	-	Idling
06:55:36.46	USH	-	-	40	40	Manual scene recording started.
07:07:17.74	---	-	-	-	-	Reset shutters.
07:07:21.50	---	-	-	-	-	Reset shutters.
07:07:25.52	SWS	-	-	40	40	Dark measurement started.
07:07:25.64	LSH	-	-	40	40	Dark measurement started.
07:07:25.64	USH	-	-	40	40	Dark measurement started.
07:07:26.04	LSH	-	-	40	40	Dark measurement started.
07:07:26.67	SWS	-	-	40	40	Manual scene recording started.
07:07:27.34	USH	-	-	40	40	Manual scene recording started.
07:07:27.67	LSH	-	-	-	-	Idling
07:09:21.59	---	-	-	-	-	
07:09:21.59	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
07:09:21.59	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++						
07:09:21.59	---	-	-	-	-	+++ Flight no. B471
07:09:21.59	---	-	-	-	-	
07:09:24.36	SWS	-	100	-	-	Sample period changed from 250ms to 100ms.
07:09:28.36	USH	-	100	-	-	Sample period changed from 250ms to 100ms.
07:09:32.28	SWS	-	-	-	-	Initialization: VIS OK NIR OK
07:09:32.32	LSH	-	100	-	-	Sample period changed from 250ms to 100ms.
07:09:33.65	USH	-	-	-	-	Initialization: VIS OK NIR OK
07:09:33.91	LSH	-	-	-	-	Initialization: VIS OK NIR OK
07:09:39.73	LSH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
07:09:41.39	LSH	-	-	40	-	VIS int.time changed from 5ms to 40ms.
07:09:41.40	LSH	-	-	-	40	NIR int.time changed from 5ms to 40ms.
07:09:42.63	USH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
07:09:45.02	USH	-	-	40	-	VIS int.time changed from 5ms to 40ms.
07:09:45.02	USH	-	-	-	40	NIR int.time changed from 5ms to 40ms.
07:09:46.29	SWS	-	-	-	5	NIR int.time changed from 5ms to 5ms.
07:09:48.09	SWS	-	-	40	-	VIS int.time changed from 5ms to 40ms.
07:09:48.09	SWS	-	-	-	40	NIR int.time changed from 5ms to 40ms.
07:09:49.50	LSH	-	-	40	40	Manual scene recording started.
07:09:49.50	SWS	-	-	40	40	Manual scene recording started.
07:09:49.51	USH	-	-	40	40	Manual scene recording started.
07:09:53.94	---	-	-	-	-	Reset shutters.
07:09:57.73	LSH	-	-	40	40	Dark measurement started.
07:09:57.74	SWS	-	-	40	40	Dark measurement started.
07:09:57.74	USH	-	-	40	40	Dark measurement started.
07:09:58.39	USH	-	-	40	40	Dark measurement started.
07:09:58.57	LSH	-	-	40	40	Manual scene recording started.
07:09:58.79	SWS	-	-	40	40	Manual scene recording started.
07:09:59.30	USH	-	-	-	-	Idling
07:10:00.11	USH	-	-	40	40	Dark measurement started.
07:10:00.21	LSH	-	-	40	40	Dark measurement started.
07:10:00.23	SWS	-	-	40	40	Dark measurement started.
07:10:01.00	USH	-	-	-	-	Idling
07:10:01.21	LSH	-	-	40	40	Manual scene recording started.
07:10:01.38	SWS	-	-	40	40	Manual scene recording started.
07:10:07.50	SWS	-	-	-	-	Telescope motor initialised.
07:10:24.77	---	-	-	-	-	*** sws vis dropped out - had to restart software
07:10:30.09	---	-	-	-	-	*** missed start of run 1
07:10:36.85	SWS	0.0	-	-	-	Telescope at scan limit - going to 45.0
07:10:37.26	SWS	1.8	-	-	-	Telescope sent to -45.000
07:10:41.16	SWS	41.4	-	-	-	Telescope at scan limit - going to -45.0
07:10:41.83	SWS	33.5	-	-	-	Telescope at scan limit - going to -45.0
07:10:42.54	SWS	25.0	-	-	-	Telescope at scan limit - going to -45.0
07:10:43.26	SWS	16.4	-	-	-	Telescope at scan limit - going to -45.0
07:10:43.93	SWS	7.9	-	-	-	Telescope at scan limit - going to -45.0
07:10:44.53	USH	-	-	40	40	Manual scene recording started.
07:10:44.66	SWS	-0.2	-	-	-	Telescope at scan limit - going to 45.0
07:10:45.38	SWS	-9.1	-	-	-	Telescope at scan limit - going to 45.0



07:10:46.09	SWS	-17.7	-	-	-	Telescope at scan limit - going to 45.0
07:10:46.82	SWS	-26.3	-	-	-	Telescope at scan limit - going to 45.0
07:10:47.53	SWS	-34.9	-	-	-	Telescope at scan limit - going to 45.0
07:10:48.24	SWS	-43.4	-	-	-	Telescope at scan limit - going to 45.0
07:10:56.04	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
07:11:03.34	---	-	-	-	-	Reset shutters.
07:11:03.95	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:11:07.28	USH	-	-	40	40	Dark measurement started.
07:11:07.29	LSH	-	-	40	40	Dark measurement started.
07:11:07.32	SWS	-	-	40	40	Dark measurement started.
07:11:08.17	USH	-	-	40	40	Manual scene recording started.
07:11:08.45	LSH	-	-	40	40	Manual scene recording started.
07:11:08.53	SWS	-	-	40	40	Manual scene recording started.
07:11:10.48	USH	-	-	40	40	Dark measurement started.
07:11:10.50	SWS	-	-	40	40	Dark measurement started.
07:11:10.54	LSH	-	-	40	40	Dark measurement started.
07:11:11.34	USH	-	-	40	40	Manual scene recording started.
07:11:11.57	SWS	-	-	40	40	Manual scene recording started.
07:11:11.78	LSH	-	-	40	40	Manual scene recording started.
07:11:11.95	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:11:19.82	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:11:27.74	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:11:35.60	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:11:43.51	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:11:51.42	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:11:59.28	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:12:07.17	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:12:15.07	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:12:22.94	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:12:30.85	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:12:38.71	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:12:46.60	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:12:54.42	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:13:02.27	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:13:10.17	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:13:18.07	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
07:13:25.94	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:13:33.86	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
07:13:41.71	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:13:49.62	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:13:57.54	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:14:05.41	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:14:13.29	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:14:21.18	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:14:29.07	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:14:36.97	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:14:44.82	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:14:52.74	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:15:00.57	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:15:08.40	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:15:16.28	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:15:24.18	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:15:32.06	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:15:39.97	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:15:47.81	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:15:49.77	---	-	-	-	-	*** sonde 1
07:15:55.72	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:16:03.69	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:16:11.61	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:16:19.53	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:16:27.39	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:16:35.28	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:16:43.20	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:16:51.06	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:16:58.96	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:17:06.87	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:17:14.71	SWS	45.1	-	-	-	Telescope at scan limit - going to -45.0
07:17:22.37	SWS	-42.8	-	-	-	Telescope stopped.
07:17:30.46	SWS	-42.7	-	-	-	Telescope sent to 0.000

07:17:34.07	---	-	-	-	-	Reset shutters.
07:17:37.30	LSH	-	-	40	40	Dark measurement started.
07:17:37.38	SWS	-	-	40	40	Dark measurement started.
07:17:37.41	USH	-	-	40	40	Dark measurement started.
07:17:38.20	LSH	-	-	40	40	Manual scene recording started.
07:17:38.39	SWS	-	-	40	40	Manual scene recording started.
07:17:38.55	USH	-	-	40	40	Manual scene recording started.
07:17:40.05	USH	-	-	40	40	Dark measurement started.
07:17:40.08	LSH	-	-	40	40	Dark measurement started.
07:17:40.11	SWS	-	-	40	40	Dark measurement started.
07:17:40.93	USH	-	-	40	40	Manual scene recording started.
07:17:41.15	LSH	-	-	40	40	Manual scene recording started.
07:17:41.36	SWS	-	-	40	40	Manual scene recording started.
07:17:44.16	LSH	-	-	40	40	Dark measurement started.
07:17:44.17	SWS	-	-	40	40	Dark measurement started.
07:17:44.25	USH	-	-	40	40	Dark measurement started.
07:17:45.00	LSH	-	-	40	40	Manual scene recording started.
07:17:45.22	SWS	-	-	40	40	Manual scene recording started.
07:17:45.44	USH	-	-	40	40	Manual scene recording started.
07:18:47.75	USH	-	-	40	40	Dark measurement started.
07:18:47.77	LSH	-	-	40	40	Dark measurement started.
07:18:47.88	SWS	-	-	40	40	Dark measurement started.
07:18:48.41	SWS	-	-	40	40	Dark measurement started.
07:18:48.59	USH	-	-	40	40	Manual scene recording started.
07:18:48.81	LSH	-	-	40	40	Manual scene recording started.
07:18:49.33	SWS	-	-	-	-	Idling
07:18:50.21	SWS	-	-	40	40	Dark measurement started.
07:18:50.25	LSH	-	-	40	40	Dark measurement started.
07:18:50.26	USH	-	-	40	40	Dark measurement started.
07:18:51.09	SWS	-	-	-	-	Idling
07:18:51.33	LSH	-	-	40	40	Manual scene recording started.
07:18:51.53	USH	-	-	40	40	Manual scene recording started.
07:18:52.23	SWS	-	-	40	40	Manual scene recording started.
07:21:09.25	---	-	-	-	-	*** run 2
07:21:25.23	SWS	0.0	-	-	-	Telescope sent to -45.000
07:21:29.18	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:21:37.09	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:21:44.97	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:21:52.88	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:22:00.76	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:22:08.62	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:22:12.33	---	-	-	-	-	*** scan rate 10 deg per sec again
07:22:16.58	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:22:24.46	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:22:32.29	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:22:40.19	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:22:48.07	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:22:55.96	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:23:03.88	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:23:11.73	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:23:19.63	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
07:23:27.51	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
07:23:35.42	SWS	-45.1	-	-	-	Telescope at scan limit - going to 45.0
07:23:40.24	SWS	8.7	-	-	-	Telescope stopped.
07:23:47.15	SWS	8.6	-	-	-	Telescope sent to 0.000
07:23:51.49	---	-	-	-	-	*** ed of run
07:23:55.04	---	-	-	-	-	Reset shutters.
07:23:58.47	SWS	-	-	40	40	Dark measurement started.
07:23:58.57	LSH	-	-	40	40	Dark measurement started.
07:23:58.95	USH	-	-	40	40	Dark measurement started.
07:23:59.36	SWS	-	-	40	40	Manual scene recording started.
07:23:59.59	LSH	-	-	40	40	Manual scene recording started.
07:23:59.80	USH	-	-	40	40	Manual scene recording started.
07:24:00.71	SWS	-	-	40	40	Dark measurement started.
07:24:00.72	LSH	-	-	40	40	Dark measurement started.
07:24:00.75	USH	-	-	40	40	Dark measurement started.
07:24:01.38	USH	-	-	40	40	Dark measurement started.
07:24:01.60	SWS	-	-	40	40	Manual scene recording started.
07:24:01.81	LSH	-	-	40	40	Manual scene recording started.

07:24:02.27	USH	-	-	-	-	Idling
07:24:04.06	USH	-	-	40	40	Manual scene recording started.
07:24:08.31	---	-	-	-	-	*** orbit 1
07:24:19.79	---	-	-	-	-	*** heading 340, 40 deg to the right
07:24:33.26	---	-	-	-	-	*** SZA 57.67
07:26:38.80	---	-	-	-	-	*** en dof orbit
07:27:07.63	---	-	-	-	-	*** orbit 2, right hand
07:27:20.68	---	-	-	-	-	*** 45 deg
07:29:15.63	---	-	-	-	-	*** end of orbit 2
07:29:19.01	USH	-	-	40	40	Dark measurement started.
07:29:19.02	LSH	-	-	40	40	Dark measurement started.
07:29:19.03	SWS	-	-	40	40	Dark measurement started.
07:29:19.91	USH	-	-	40	40	Manual scene recording started.
07:29:20.14	LSH	-	-	40	40	Manual scene recording started.
07:29:20.34	SWS	-	-	40	40	Manual scene recording started.
07:29:21.66	USH	-	-	40	40	Dark measurement started.
07:29:21.67	LSH	-	-	40	40	Dark measurement started.
07:29:21.73	SWS	-	-	40	40	Dark measurement started.
07:29:22.57	USH	-	-	40	40	Manual scene recording started.
07:29:22.80	LSH	-	-	40	40	Manual scene recording started.
07:29:23.02	SWS	-	-	40	40	Manual scene recording started.
07:29:24.33	SWS	-	-	40	40	Dark measurement started.
07:29:24.38	LSH	-	-	40	40	Dark measurement started.
07:29:24.40	USH	-	-	40	40	Dark measurement started.
07:29:25.21	SWS	-	-	40	40	Manual scene recording started.
07:29:25.44	LSH	-	-	40	40	Manual scene recording started.
07:29:25.59	USH	-	-	40	40	Manual scene recording started.
07:30:05.57	---	-	-	-	-	*** profile descent (spiral)
07:30:27.25	---	-	-	-	-	*** profile 2 over junffraujoch
07:34:08.58	LSH	-	-	40	40	Dark measurement started.
07:34:08.62	USH	-	-	40	40	Dark measurement started.
07:34:08.65	SWS	-	-	40	40	Dark measurement started.
07:34:09.42	LSH	-	-	40	40	Manual scene recording started.
07:34:09.65	USH	-	-	40	40	Manual scene recording started.
07:34:09.92	SWS	-	-	40	40	Manual scene recording started.
07:34:11.77	SWS	-	-	40	40	Dark measurement started.
07:34:11.79	USH	-	-	40	40	Dark measurement started.
07:34:11.85	LSH	-	-	40	40	Dark measurement started.
07:34:12.61	SWS	-	-	40	40	Manual scene recording started.
07:34:12.89	USH	-	-	40	40	Manual scene recording started.
07:34:13.10	LSH	-	-	40	40	Manual scene recording started.
07:42:46.47	---	-	-	-	-	*** profile ended
07:42:55.13	---	-	-	-	-	*** repositioning to A
07:44:44.74	---	-	-	-	-	Reset shutters.
07:44:49.16	SWS	-	-	40	40	Dark measurement started.
07:44:49.23	USH	-	-	40	40	Dark measurement started.
07:44:49.26	LSH	-	-	40	40	Dark measurement started.
07:44:50.06	SWS	-	-	40	40	Manual scene recording started.
07:44:50.24	USH	-	-	40	40	Manual scene recording started.
07:44:50.47	LSH	-	-	40	40	Manual scene recording started.
07:44:52.17	LSH	-	-	40	40	Dark measurement started.
07:44:52.18	SWS	-	-	40	40	Dark measurement started.
07:44:52.24	USH	-	-	40	40	Dark measurement started.
07:44:53.07	LSH	-	-	40	40	Manual scene recording started.
07:44:53.27	SWS	-	-	40	40	Manual scene recording started.
07:44:53.49	USH	-	-	40	40	Manual scene recording started.
07:44:56.47	USH	-	-	40	40	Dark measurement started.
07:44:56.47	LSH	-	-	40	40	Dark measurement started.
07:44:56.52	SWS	-	-	40	40	Dark measurement started.
07:44:57.31	USH	-	-	40	40	Manual scene recording started.
07:44:57.55	LSH	-	-	40	40	Manual scene recording started.
07:44:57.77	SWS	-	-	40	40	Manual scene recording started.
07:45:58.03	---	-	-	-	-	*** run 3 at FL150
07:45:59.78	SWS	0.0	-	-	-	Telescope at scan limit - going to 50.0
07:46:00.20	SWS	1.9	-	-	-	Telescope sent to -50.000
07:46:04.22	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:46:04.92	SWS	42.1	-	-	-	Telescope at scan limit - going to -50.0
07:46:05.63	SWS	33.2	-	-	-	Telescope at scan limit - going to -50.0
07:46:06.35	SWS	24.4	-	-	-	Telescope at scan limit - going to -50.0

07:46:07.07	SWS	15.9	-	-	-	Telescope at scan limit - going to -50.0
07:46:07.78	SWS	7.3	-	-	-	Telescope at scan limit - going to -50.0
07:46:08.50	SWS	-1.3	-	-	-	Telescope at scan limit - going to 50.0
07:46:09.22	SWS	-9.8	-	-	-	Telescope at scan limit - going to 50.0
07:46:09.90	SWS	-18.4	-	-	-	Telescope at scan limit - going to 50.0
07:46:10.60	SWS	-26.6	-	-	-	Telescope at scan limit - going to 50.0
07:46:11.32	SWS	-35.2	-	-	-	Telescope at scan limit - going to 50.0
07:46:12.05	SWS	-43.8	-	-	-	Telescope at scan limit - going to 50.0
07:46:12.76	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:46:21.78	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:46:30.79	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:46:39.82	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:46:48.78	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:46:57.80	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:47:06.83	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:47:15.34	SWS	48.9	-	-	-	Telescope at scan limit - going to -50.0
07:47:24.32	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:47:32.92	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:47:41.90	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:47:50.91	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:47:59.91	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:48:08.94	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:48:17.50	SWS	-49.5	-	-	-	Telescope at scan limit - going to 50.0
07:48:26.02	SWS	49.1	-	-	-	Telescope at scan limit - going to -50.0
07:48:35.05	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:48:44.06	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:48:53.01	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:49:02.02	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:49:11.02	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:49:20.00	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:49:29.02	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:49:38.03	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:49:47.03	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:49:56.01	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:50:05.08	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:50:14.12	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:50:23.16	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:50:23.36	---	-	-	-	-	*** going to manually cycle through scan
angles once to compare with automatic scan						
07:50:23.76	SWS	-47.1	-	-	-	Telescope stopped.
07:50:30.85	SWS	-47.1	-	-	-	Telescope sent to 50.500
07:50:31.97	SWS	50.5	-	-	-	Telescope sent to 51.000
07:50:32.53	SWS	51.0	-	-	-	Telescope stopped.
07:50:32.91	SWS	51.0	-	-	-	Telescope sent to 51.500
07:50:35.42	SWS	51.5	-	-	-	Telescope sent to 52.000
07:50:37.43	SWS	52.0	-	-	-	Telescope sent to 51.500
07:50:38.31	SWS	51.5	-	-	-	Telescope sent to 51.000
07:50:39.23	SWS	51.0	-	-	-	Telescope sent to 50.500
07:50:40.12	SWS	50.5	-	-	-	Telescope sent to 50.000
07:50:41.03	SWS	50.0	-	-	-	Telescope sent to 49.500
07:50:41.51	SWS	49.5	-	-	-	Telescope sent to 49.000
07:50:42.44	SWS	49.0	-	-	-	Telescope sent to 48.500
07:50:42.77	SWS	48.5	-	-	-	Telescope sent to 48.000
07:50:43.25	SWS	48.0	-	-	-	Telescope sent to 47.500
07:50:43.78	SWS	47.5	-	-	-	Telescope sent to 47.000
07:50:44.35	SWS	47.0	-	-	-	Telescope sent to 46.500
07:50:44.86	SWS	46.5	-	-	-	Telescope sent to 46.000
07:50:45.92	SWS	46.0	-	-	-	Telescope sent to 45.500
07:50:46.41	SWS	45.5	-	-	-	Telescope sent to 45.000
07:50:46.95	SWS	45.0	-	-	-	Telescope sent to 44.500
07:50:47.47	SWS	44.5	-	-	-	Telescope sent to 44.000
07:50:47.96	SWS	44.0	-	-	-	Telescope sent to 43.500
07:50:48.49	SWS	43.5	-	-	-	Telescope sent to 43.000
07:50:48.97	SWS	43.0	-	-	-	Telescope sent to 42.500
07:50:49.48	SWS	42.5	-	-	-	Telescope sent to 42.000
07:50:50.01	SWS	42.0	-	-	-	Telescope sent to 41.500
07:50:50.89	SWS	41.5	-	-	-	Telescope sent to 41.000
07:50:51.25	SWS	41.0	-	-	-	Telescope sent to 40.500
07:50:53.83	SWS	40.5	-	-	-	Telescope sent to 40.000

07:50:54.34	SWS	40.0	-	-	-	Telescope sent to 39.500
07:50:55.23	SWS	39.5	-	-	-	Telescope sent to 39.000
07:50:55.55	SWS	39.0	-	-	-	Telescope sent to 38.500
07:50:56.42	SWS	38.5	-	-	-	Telescope sent to 38.000
07:50:56.85	SWS	38.0	-	-	-	Telescope sent to 37.500
07:50:57.73	SWS	37.5	-	-	-	Telescope sent to 37.000
07:50:58.62	SWS	37.0	-	-	-	Telescope sent to 36.500
07:50:59.02	SWS	36.5	-	-	-	Telescope sent to 36.000
07:50:59.90	SWS	36.0	-	-	-	Telescope sent to 35.500
07:51:00.79	SWS	35.5	-	-	-	Telescope sent to 35.000
07:51:01.22	SWS	35.0	-	-	-	Telescope sent to 34.500
07:51:02.07	SWS	34.5	-	-	-	Telescope sent to 34.000
07:51:02.57	SWS	34.0	-	-	-	Telescope sent to 33.500
07:51:03.44	SWS	33.5	-	-	-	Telescope sent to 33.000
07:51:03.90	SWS	33.0	-	-	-	Telescope sent to 32.500
07:51:04.78	SWS	32.5	-	-	-	Telescope sent to 32.000
07:51:05.24	SWS	32.0	-	-	-	Telescope sent to 31.500
07:51:06.16	SWS	31.5	-	-	-	Telescope sent to 31.000
07:51:06.51	SWS	31.0	-	-	-	Telescope sent to 30.500
07:51:07.32	SWS	30.5	-	-	-	Telescope sent to 30.000
07:51:07.68	SWS	30.0	-	-	-	Telescope sent to 29.500
07:51:08.52	SWS	29.5	-	-	-	Telescope sent to 29.000
07:51:09.33	SWS	29.0	-	-	-	Telescope sent to 28.500
07:51:10.23	SWS	28.5	-	-	-	Telescope sent to 28.000
07:51:10.69	SWS	28.0	-	-	-	Telescope sent to 27.500
07:51:11.56	SWS	27.5	-	-	-	Telescope sent to 27.000
07:51:12.43	SWS	27.0	-	-	-	Telescope sent to 26.500
07:51:12.86	SWS	26.5	-	-	-	Telescope sent to 26.000
07:51:13.73	SWS	26.0	-	-	-	Telescope sent to 25.500
07:51:14.30	SWS	25.5	-	-	-	Telescope sent to 25.000
07:51:16.30	SWS	25.0	-	-	-	Telescope sent to 24.500
07:51:19.04	SWS	24.5	-	-	-	Telescope sent to 24.000
07:51:19.54	SWS	24.0	-	-	-	Telescope sent to 23.500
07:51:20.39	SWS	23.5	-	-	-	Telescope sent to 23.000
07:51:21.28	SWS	23.0	-	-	-	Telescope sent to 22.500
07:51:21.64	SWS	22.5	-	-	-	Telescope sent to 22.000
07:51:22.53	SWS	22.0	-	-	-	Telescope sent to 21.500
07:51:23.43	SWS	21.5	-	-	-	Telescope sent to 21.000
07:51:23.74	SWS	21.0	-	-	-	Telescope sent to 20.500
07:51:24.61	SWS	20.5	-	-	-	Telescope sent to 20.000
07:51:25.00	SWS	20.0	-	-	-	Telescope sent to 19.500
07:51:25.90	SWS	19.5	-	-	-	Telescope sent to 19.000
07:51:26.28	SWS	19.0	-	-	-	Telescope sent to 18.500
07:51:27.19	SWS	18.5	-	-	-	Telescope sent to 18.000
07:51:27.51	SWS	18.0	-	-	-	Telescope sent to 17.500
07:51:28.00	SWS	17.5	-	-	-	Telescope sent to 17.000
07:51:28.91	SWS	17.0	-	-	-	Telescope sent to 16.500
07:51:29.22	SWS	16.5	-	-	-	Telescope sent to 16.000
07:51:29.67	SWS	16.0	-	-	-	Telescope sent to 15.500
07:51:30.56	SWS	15.5	-	-	-	Telescope sent to 15.000
07:51:30.91	SWS	15.0	-	-	-	Telescope sent to 14.500
07:51:31.43	SWS	14.5	-	-	-	Telescope sent to 14.000
07:51:32.36	SWS	14.0	-	-	-	Telescope sent to 13.500
07:51:32.68	SWS	13.5	-	-	-	Telescope sent to 13.000
07:51:33.53	SWS	13.0	-	-	-	Telescope sent to 12.500
07:51:33.97	SWS	12.5	-	-	-	Telescope sent to 12.000
07:51:34.86	SWS	12.0	-	-	-	Telescope sent to 11.500
07:51:35.18	SWS	11.5	-	-	-	Telescope sent to 11.000
07:51:36.14	SWS	11.0	-	-	-	Telescope sent to 10.500
07:51:36.45	SWS	10.5	-	-	-	Telescope sent to 10.000
07:51:37.30	SWS	10.0	-	-	-	Telescope sent to 9.500
07:51:37.62	SWS	9.5	-	-	-	Telescope sent to 9.000
07:51:38.54	SWS	9.0	-	-	-	Telescope sent to 8.500
07:51:38.85	SWS	8.5	-	-	-	Telescope sent to 8.000
07:51:39.25	SWS	8.0	-	-	-	Telescope sent to 7.500
07:51:39.76	SWS	7.5	-	-	-	Telescope sent to 7.000
07:51:40.24	SWS	7.0	-	-	-	Telescope sent to 6.500
07:51:40.73	SWS	6.5	-	-	-	Telescope sent to 6.000
07:51:41.22	SWS	6.0	-	-	-	Telescope sent to 5.500

07:51:41.76	SWS	5.5	-	-	-	Telescope sent to 5.000
07:51:42.20	SWS	5.0	-	-	-	Telescope sent to 4.500
07:51:42.61	SWS	4.5	-	-	-	Telescope sent to 4.000
07:51:42.98	SWS	4.0	-	-	-	Telescope sent to 3.500
07:51:43.34	SWS	3.5	-	-	-	Telescope sent to 3.000
07:51:43.75	SWS	3.0	-	-	-	Telescope sent to 2.500
07:51:44.12	SWS	2.5	-	-	-	Telescope sent to 2.000
07:51:44.44	SWS	2.0	-	-	-	Telescope sent to 1.500
07:51:44.76	SWS	1.5	-	-	-	Telescope sent to 1.000
07:51:45.12	SWS	1.0	-	-	-	Telescope sent to 0.500
07:51:45.41	SWS	0.5	-	-	-	Telescope sent to 0.000
07:51:45.69	SWS	-0.0	-	-	-	Telescope sent to -0.500
07:51:46.02	SWS	-0.5	-	-	-	Telescope sent to -1.000
07:51:46.35	SWS	-1.0	-	-	-	Telescope sent to -1.500
07:51:46.64	SWS	-1.5	-	-	-	Telescope sent to -2.000
07:51:46.97	SWS	-2.0	-	-	-	Telescope sent to -2.500
07:51:47.31	SWS	-2.5	-	-	-	Telescope sent to -3.000
07:51:47.63	SWS	-3.0	-	-	-	Telescope sent to -3.500
07:51:47.97	SWS	-3.5	-	-	-	Telescope sent to -4.000
07:51:48.30	SWS	-4.0	-	-	-	Telescope sent to -4.500
07:51:48.62	SWS	-4.5	-	-	-	Telescope sent to -5.000
07:51:48.94	SWS	-5.0	-	-	-	Telescope sent to -5.500
07:51:49.27	SWS	-5.5	-	-	-	Telescope sent to -6.000
07:51:49.60	SWS	-6.0	-	-	-	Telescope sent to -6.500
07:51:49.92	SWS	-6.5	-	-	-	Telescope sent to -7.000
07:51:50.22	SWS	-7.0	-	-	-	Telescope sent to -7.500
07:51:50.54	SWS	-7.5	-	-	-	Telescope sent to -8.000
07:51:50.85	SWS	-8.0	-	-	-	Telescope sent to -8.500
07:51:51.17	SWS	-8.5	-	-	-	Telescope sent to -9.000
07:51:51.52	SWS	-9.0	-	-	-	Telescope sent to -9.500
07:51:51.84	SWS	-9.5	-	-	-	Telescope sent to -10.000
07:51:52.15	SWS	-10.0	-	-	-	Telescope sent to -10.500
07:51:52.48	SWS	-10.5	-	-	-	Telescope sent to -11.000
07:51:52.79	SWS	-11.0	-	-	-	Telescope sent to -11.500
07:51:53.11	SWS	-11.5	-	-	-	Telescope sent to -12.000
07:51:53.44	SWS	-12.0	-	-	-	Telescope sent to -12.500
07:51:53.75	SWS	-12.5	-	-	-	Telescope sent to -13.000
07:51:54.22	SWS	-13.0	-	-	-	Telescope sent to -13.500
07:51:57.95	SWS	-13.5	-	-	-	Telescope sent to -14.000
07:51:58.30	SWS	-14.0	-	-	-	Telescope sent to -14.500
07:51:58.62	SWS	-14.5	-	-	-	Telescope sent to -15.000
07:51:58.98	SWS	-15.0	-	-	-	Telescope sent to -15.500
07:51:59.31	SWS	-15.5	-	-	-	Telescope sent to -16.000
07:51:59.63	SWS	-16.0	-	-	-	Telescope sent to -16.500
07:51:59.96	SWS	-16.5	-	-	-	Telescope sent to -17.000
07:52:00.29	SWS	-17.0	-	-	-	Telescope sent to -17.500
07:52:00.61	SWS	-17.5	-	-	-	Telescope sent to -18.000
07:52:00.93	SWS	-18.0	-	-	-	Telescope sent to -18.500
07:52:01.25	SWS	-18.5	-	-	-	Telescope sent to -19.000
07:52:01.56	SWS	-19.0	-	-	-	Telescope sent to -19.500
07:52:01.90	SWS	-19.5	-	-	-	Telescope sent to -20.000
07:52:03.02	SWS	-20.0	-	-	-	Telescope sent to -20.500
07:52:03.33	SWS	-20.5	-	-	-	Telescope sent to -21.000
07:52:03.66	SWS	-21.0	-	-	-	Telescope sent to -21.500
07:52:04.00	SWS	-21.5	-	-	-	Telescope sent to -22.000
07:52:04.29	SWS	-22.0	-	-	-	Telescope sent to -22.500
07:52:04.62	SWS	-22.5	-	-	-	Telescope sent to -23.000
07:52:04.97	SWS	-23.0	-	-	-	Telescope sent to -23.500
07:52:05.30	SWS	-23.5	-	-	-	Telescope sent to -24.000
07:52:05.62	SWS	-24.0	-	-	-	Telescope sent to -24.500
07:52:05.98	SWS	-24.5	-	-	-	Telescope sent to -25.000
07:52:06.30	SWS	-25.0	-	-	-	Telescope sent to -25.500
07:52:06.64	SWS	-25.5	-	-	-	Telescope sent to -26.000
07:52:07.00	SWS	-26.0	-	-	-	Telescope sent to -26.500
07:52:07.35	SWS	-26.5	-	-	-	Telescope sent to -27.000
07:52:09.35	SWS	-27.0	-	-	-	Telescope sent to -27.500
07:52:09.79	SWS	-27.5	-	-	-	Telescope sent to -28.000
07:52:10.26	SWS	-28.0	-	-	-	Telescope sent to -28.500
07:52:10.70	SWS	-28.5	-	-	-	Telescope sent to -29.000

07:52:11.16	SWS	-29.0	-	-	-	Telescope sent to	-29.500
07:52:11.48	SWS	-29.5	-	-	-	Telescope sent to	-30.000
07:52:11.91	SWS	-30.0	-	-	-	Telescope sent to	-30.500
07:52:12.28	SWS	-30.5	-	-	-	Telescope sent to	-31.000
07:52:12.71	SWS	-31.0	-	-	-	Telescope sent to	-31.500
07:52:13.11	SWS	-31.5	-	-	-	Telescope sent to	-32.000
07:52:13.53	SWS	-32.0	-	-	-	Telescope sent to	-32.500
07:52:13.94	SWS	-32.5	-	-	-	Telescope sent to	-33.000
07:52:14.26	SWS	-33.0	-	-	-	Telescope sent to	-33.500
07:52:14.61	SWS	-33.5	-	-	-	Telescope sent to	-34.000
07:52:15.01	SWS	-34.0	-	-	-	Telescope sent to	-34.500
07:52:15.33	SWS	-34.5	-	-	-	Telescope sent to	-35.000
07:52:15.64	SWS	-35.0	-	-	-	Telescope sent to	-35.500
07:52:16.16	SWS	-35.5	-	-	-	Telescope sent to	-36.000
07:52:16.48	SWS	-36.0	-	-	-	Telescope sent to	-36.500
07:52:16.81	SWS	-36.5	-	-	-	Telescope sent to	-37.000
07:52:17.14	SWS	-37.0	-	-	-	Telescope sent to	-37.500
07:52:17.45	SWS	-37.5	-	-	-	Telescope sent to	-38.000
07:52:17.77	SWS	-38.0	-	-	-	Telescope sent to	-38.500
07:52:18.10	SWS	-38.5	-	-	-	Telescope sent to	-39.000
07:52:18.42	SWS	-39.0	-	-	-	Telescope sent to	-39.500
07:52:18.73	SWS	-39.5	-	-	-	Telescope sent to	-40.000
07:52:19.07	SWS	-40.0	-	-	-	Telescope sent to	-40.500
07:52:19.41	SWS	-40.5	-	-	-	Telescope sent to	-41.000
07:52:19.73	SWS	-41.0	-	-	-	Telescope sent to	-41.500
07:52:20.05	SWS	-41.5	-	-	-	Telescope sent to	-42.000
07:52:20.35	SWS	-42.0	-	-	-	Telescope sent to	-42.500
07:52:20.67	SWS	-42.5	-	-	-	Telescope sent to	-43.000
07:52:21.00	SWS	-43.0	-	-	-	Telescope sent to	-43.500
07:52:21.32	SWS	-43.5	-	-	-	Telescope sent to	-44.000
07:52:21.64	SWS	-44.0	-	-	-	Telescope sent to	-44.500
07:52:21.99	SWS	-44.5	-	-	-	Telescope sent to	-45.000
07:52:22.33	SWS	-45.0	-	-	-	Telescope sent to	-45.500
07:52:22.65	SWS	-45.5	-	-	-	Telescope sent to	-46.000
07:52:22.97	SWS	-46.0	-	-	-	Telescope sent to	-46.500
07:52:23.31	SWS	-46.5	-	-	-	Telescope sent to	-47.000
07:52:23.63	SWS	-47.0	-	-	-	Telescope sent to	-47.500
07:52:23.96	SWS	-47.5	-	-	-	Telescope sent to	-48.000
07:52:24.27	SWS	-48.0	-	-	-	Telescope sent to	-48.500
07:52:24.56	SWS	-48.5	-	-	-	Telescope sent to	-49.000
07:52:24.91	SWS	-49.0	-	-	-	Telescope sent to	-49.500
07:52:25.23	SWS	-49.5	-	-	-	Telescope sent to	-50.000
07:52:26.80	SWS	-50.0	-	-	-	Telescope sent to	-49.500
07:52:27.17	SWS	-49.5	-	-	-	Telescope sent to	-49.000
07:52:27.53	SWS	-49.0	-	-	-	Telescope sent to	-48.500
07:52:28.00	SWS	-48.5	-	-	-	Telescope sent to	-48.000
07:52:28.35	SWS	-48.0	-	-	-	Telescope sent to	-47.500
07:52:28.66	SWS	-47.5	-	-	-	Telescope sent to	-47.000
07:52:29.00	SWS	-47.0	-	-	-	Telescope sent to	-46.500
07:52:29.32	SWS	-46.5	-	-	-	Telescope sent to	-46.000
07:52:29.65	SWS	-46.0	-	-	-	Telescope sent to	-45.500
07:52:30.00	SWS	-45.5	-	-	-	Telescope sent to	-45.000
07:52:30.34	SWS	-45.0	-	-	-	Telescope sent to	-44.500
07:52:30.69	SWS	-44.5	-	-	-	Telescope sent to	-44.000
07:52:31.03	SWS	-44.0	-	-	-	Telescope sent to	-43.500
07:52:31.35	SWS	-43.5	-	-	-	Telescope sent to	-43.000
07:52:31.69	SWS	-43.0	-	-	-	Telescope sent to	-42.500
07:52:32.01	SWS	-42.5	-	-	-	Telescope sent to	-42.000
07:52:32.33	SWS	-42.0	-	-	-	Telescope sent to	-41.500
07:52:32.66	SWS	-41.5	-	-	-	Telescope sent to	-41.000
07:52:33.01	SWS	-41.0	-	-	-	Telescope sent to	-40.500
07:52:33.35	SWS	-40.5	-	-	-	Telescope sent to	-40.000
07:52:33.69	SWS	-40.0	-	-	-	Telescope sent to	-39.500
07:52:34.01	SWS	-39.5	-	-	-	Telescope sent to	-39.000
07:52:34.29	SWS	-39.0	-	-	-	Telescope sent to	-38.500
07:52:34.64	SWS	-38.5	-	-	-	Telescope sent to	-38.000
07:52:34.96	SWS	-38.0	-	-	-	Telescope sent to	-37.500
07:52:35.30	SWS	-37.5	-	-	-	Telescope sent to	-37.000
07:52:35.64	SWS	-37.0	-	-	-	Telescope sent to	-36.500

07:52:35.99	SWS	-36.5	-	-	-	Telescope sent to -36.000
07:52:36.31	SWS	-36.0	-	-	-	Telescope sent to -35.500
07:52:36.63	SWS	-35.5	-	-	-	Telescope sent to -35.000
07:52:36.94	SWS	-35.0	-	-	-	Telescope sent to -34.500
07:52:37.27	SWS	-34.5	-	-	-	Telescope sent to -34.000
07:52:37.62	SWS	-34.0	-	-	-	Telescope sent to -33.500
07:52:37.97	SWS	-33.5	-	-	-	Telescope sent to -33.000
07:52:38.29	SWS	-33.0	-	-	-	Telescope sent to -32.500
07:52:38.62	SWS	-32.5	-	-	-	Telescope sent to -32.000
07:52:38.92	SWS	-32.0	-	-	-	Telescope sent to -31.500
07:52:39.24	SWS	-31.5	-	-	-	Telescope sent to -31.000
07:52:39.58	SWS	-31.0	-	-	-	Telescope sent to -30.500
07:52:39.97	SWS	-30.5	-	-	-	Telescope sent to -30.000
07:52:40.29	SWS	-30.0	-	-	-	Telescope sent to -29.500
07:52:40.58	SWS	-29.5	-	-	-	Telescope sent to -29.000
07:52:40.89	SWS	-29.0	-	-	-	Telescope sent to -28.500
07:52:41.22	SWS	-28.5	-	-	-	Telescope sent to -28.000
07:52:41.57	SWS	-28.0	-	-	-	Telescope sent to -27.500
07:52:41.92	SWS	-27.5	-	-	-	Telescope sent to -27.000
07:52:42.24	SWS	-27.0	-	-	-	Telescope sent to -26.500
07:52:42.56	SWS	-26.5	-	-	-	Telescope sent to -26.000
07:52:42.90	SWS	-26.0	-	-	-	Telescope sent to -25.500
07:52:43.23	SWS	-25.5	-	-	-	Telescope sent to -25.000
07:52:43.55	SWS	-25.0	-	-	-	Telescope sent to -24.500
07:52:43.87	SWS	-24.5	-	-	-	Telescope sent to -24.000
07:52:44.19	SWS	-24.0	-	-	-	Telescope sent to -23.500
07:52:44.51	SWS	-23.5	-	-	-	Telescope sent to -23.000
07:52:44.83	SWS	-23.0	-	-	-	Telescope sent to -22.500
07:52:45.18	SWS	-22.5	-	-	-	Telescope sent to -22.000
07:52:45.50	SWS	-22.0	-	-	-	Telescope sent to -21.500
07:52:45.82	SWS	-21.5	-	-	-	Telescope sent to -21.000
07:52:46.11	SWS	-21.0	-	-	-	Telescope sent to -20.500
07:52:46.43	SWS	-20.5	-	-	-	Telescope sent to -20.000
07:52:46.75	SWS	-20.0	-	-	-	Telescope sent to -19.500
07:52:47.04	SWS	-19.5	-	-	-	Telescope sent to -19.000
07:52:47.36	SWS	-19.0	-	-	-	Telescope sent to -18.500
07:52:47.68	SWS	-18.5	-	-	-	Telescope sent to -18.000
07:52:48.03	SWS	-18.0	-	-	-	Telescope sent to -17.500
07:52:48.35	SWS	-17.5	-	-	-	Telescope sent to -17.000
07:52:48.64	SWS	-17.0	-	-	-	Telescope sent to -16.500
07:52:49.00	SWS	-16.5	-	-	-	Telescope sent to -16.000
07:52:49.32	SWS	-16.0	-	-	-	Telescope sent to -15.500
07:52:49.65	SWS	-15.5	-	-	-	Telescope sent to -15.000
07:52:49.99	SWS	-15.0	-	-	-	Telescope sent to -14.500
07:52:50.25	SWS	-14.5	-	-	-	Telescope sent to -14.000
07:52:50.59	SWS	-14.0	-	-	-	Telescope sent to -13.500
07:52:50.92	SWS	-13.5	-	-	-	Telescope sent to -13.000
07:52:51.22	SWS	-13.0	-	-	-	Telescope sent to -12.500
07:52:51.54	SWS	-12.5	-	-	-	Telescope sent to -12.000
07:52:51.86	SWS	-12.0	-	-	-	Telescope sent to -11.500
07:52:52.18	SWS	-11.5	-	-	-	Telescope sent to -11.000
07:52:52.50	SWS	-11.0	-	-	-	Telescope sent to -10.500
07:52:52.82	SWS	-10.5	-	-	-	Telescope sent to -10.000
07:52:53.15	SWS	-10.0	-	-	-	Telescope sent to -9.500
07:52:53.48	SWS	-9.5	-	-	-	Telescope sent to -9.000
07:52:53.80	SWS	-9.0	-	-	-	Telescope sent to -8.500
07:52:54.13	SWS	-8.5	-	-	-	Telescope sent to -8.000
07:52:54.45	SWS	-8.0	-	-	-	Telescope sent to -7.500
07:52:54.74	SWS	-7.5	-	-	-	Telescope sent to -7.000
07:52:55.06	SWS	-7.0	-	-	-	Telescope sent to -6.500
07:52:55.39	SWS	-6.5	-	-	-	Telescope sent to -6.000
07:52:55.75	SWS	-6.0	-	-	-	Telescope sent to -5.500
07:52:56.07	SWS	-5.5	-	-	-	Telescope sent to -5.000
07:52:56.39	SWS	-5.0	-	-	-	Telescope sent to -4.500
07:52:56.72	SWS	-4.5	-	-	-	Telescope sent to -4.000
07:52:57.03	SWS	-4.0	-	-	-	Telescope sent to -3.500
07:52:57.35	SWS	-3.5	-	-	-	Telescope sent to -3.000
07:52:57.64	SWS	-3.0	-	-	-	Telescope sent to -2.500
07:52:57.96	SWS	-2.5	-	-	-	Telescope sent to -2.000



07:52:58.26	SWS	-2.0	-	-	-	Telescope sent to -1.500
07:52:58.58	SWS	-1.5	-	-	-	Telescope sent to -1.000
07:52:58.92	SWS	-1.0	-	-	-	Telescope sent to -0.500
07:52:59.24	SWS	-0.5	-	-	-	Telescope sent to 0.000
07:52:59.58	SWS	0.0	-	-	-	Telescope sent to 0.500
07:52:59.91	SWS	0.5	-	-	-	Telescope sent to 1.000
07:53:00.21	SWS	1.0	-	-	-	Telescope sent to 1.500
07:53:00.54	SWS	1.5	-	-	-	Telescope sent to 2.000
07:53:00.86	SWS	2.0	-	-	-	Telescope sent to 2.500
07:53:01.18	SWS	2.5	-	-	-	Telescope sent to 3.000
07:53:01.48	SWS	3.0	-	-	-	Telescope sent to 3.500
07:53:01.80	SWS	3.5	-	-	-	Telescope sent to 4.000
07:53:02.13	SWS	4.0	-	-	-	Telescope sent to 4.500
07:53:02.46	SWS	4.5	-	-	-	Telescope sent to 5.000
07:53:02.78	SWS	5.0	-	-	-	Telescope sent to 5.500
07:53:03.13	SWS	5.5	-	-	-	Telescope sent to 6.000
07:53:03.46	SWS	6.0	-	-	-	Telescope sent to 6.500
07:53:03.74	SWS	6.5	-	-	-	Telescope sent to 7.000
07:53:04.07	SWS	7.0	-	-	-	Telescope sent to 7.500
07:53:04.39	SWS	7.5	-	-	-	Telescope sent to 8.000
07:53:04.71	SWS	8.0	-	-	-	Telescope sent to 8.500
07:53:05.03	SWS	8.5	-	-	-	Telescope sent to 9.000
07:53:05.35	SWS	9.0	-	-	-	Telescope sent to 9.500
07:53:05.67	SWS	9.5	-	-	-	Telescope sent to 10.000
07:53:06.03	SWS	10.0	-	-	-	Telescope sent to 10.500
07:53:06.37	SWS	10.5	-	-	-	Telescope sent to 11.000
07:53:06.69	SWS	11.0	-	-	-	Telescope sent to 11.500
07:53:07.04	SWS	11.5	-	-	-	Telescope sent to 12.000
07:53:07.36	SWS	12.0	-	-	-	Telescope sent to 12.500
07:53:07.69	SWS	12.5	-	-	-	Telescope sent to 13.000
07:53:08.02	SWS	13.0	-	-	-	Telescope sent to 13.500
07:53:08.31	SWS	13.5	-	-	-	Telescope sent to 14.000
07:53:08.63	SWS	14.0	-	-	-	Telescope sent to 14.500
07:53:09.00	SWS	14.5	-	-	-	Telescope sent to 15.000
07:53:09.32	SWS	15.0	-	-	-	Telescope sent to 15.500
07:53:09.64	SWS	15.5	-	-	-	Telescope sent to 16.000
07:53:09.97	SWS	16.0	-	-	-	Telescope sent to 16.500
07:53:10.27	SWS	16.5	-	-	-	Telescope sent to 17.000
07:53:10.60	SWS	17.0	-	-	-	Telescope sent to 17.500
07:53:10.91	SWS	17.5	-	-	-	Telescope sent to 18.000
07:53:11.23	SWS	18.0	-	-	-	Telescope sent to 18.500
07:53:11.55	SWS	18.5	-	-	-	Telescope sent to 19.000
07:53:11.89	SWS	19.0	-	-	-	Telescope sent to 19.500
07:53:12.23	SWS	19.5	-	-	-	Telescope sent to 20.000
07:53:12.58	SWS	20.0	-	-	-	Telescope sent to 20.500
07:53:12.91	SWS	20.5	-	-	-	Telescope sent to 21.000
07:53:13.25	SWS	21.0	-	-	-	Telescope sent to 21.500
07:53:13.58	SWS	21.5	-	-	-	Telescope sent to 22.000
07:53:13.92	SWS	22.0	-	-	-	Telescope sent to 22.500
07:53:14.26	SWS	22.5	-	-	-	Telescope sent to 23.000
07:53:14.58	SWS	23.0	-	-	-	Telescope sent to 23.500
07:53:14.91	SWS	23.5	-	-	-	Telescope sent to 24.000
07:53:15.23	SWS	24.0	-	-	-	Telescope sent to 24.500
07:53:15.56	SWS	24.5	-	-	-	Telescope sent to 25.000
07:53:15.91	SWS	25.0	-	-	-	Telescope sent to 25.500
07:53:16.25	SWS	25.5	-	-	-	Telescope sent to 26.000
07:53:16.59	SWS	26.0	-	-	-	Telescope sent to 26.500
07:53:16.96	SWS	26.5	-	-	-	Telescope sent to 27.000
07:53:17.29	SWS	27.0	-	-	-	Telescope sent to 27.500
07:53:17.61	SWS	27.5	-	-	-	Telescope sent to 28.000
07:53:17.99	SWS	28.0	-	-	-	Telescope sent to 28.500
07:53:18.31	SWS	28.5	-	-	-	Telescope sent to 29.000
07:53:18.61	SWS	29.0	-	-	-	Telescope sent to 29.500
07:53:18.92	SWS	29.5	-	-	-	Telescope sent to 30.000
07:53:19.25	SWS	30.0	-	-	-	Telescope sent to 30.500
07:53:19.58	SWS	30.5	-	-	-	Telescope sent to 31.000
07:53:19.92	SWS	31.0	-	-	-	Telescope sent to 31.500
07:53:20.25	SWS	31.5	-	-	-	Telescope sent to 32.000
07:53:20.59	SWS	32.0	-	-	-	Telescope sent to 32.500

07:53:20.92	SWS	32.5	-	-	-	Telescope sent to 33.000
07:53:21.26	SWS	33.0	-	-	-	Telescope sent to 33.500
07:53:21.58	SWS	33.5	-	-	-	Telescope sent to 34.000
07:53:21.87	SWS	34.0	-	-	-	Telescope sent to 34.500
07:53:22.22	SWS	34.5	-	-	-	Telescope sent to 35.000
07:53:22.55	SWS	35.0	-	-	-	Telescope sent to 35.500
07:53:22.89	SWS	35.5	-	-	-	Telescope sent to 36.000
07:53:23.22	SWS	36.0	-	-	-	Telescope sent to 36.500
07:53:23.57	SWS	36.5	-	-	-	Telescope sent to 37.000
07:53:23.89	SWS	37.0	-	-	-	Telescope sent to 37.500
07:53:24.25	SWS	37.5	-	-	-	Telescope sent to 38.000
07:53:24.54	SWS	38.0	-	-	-	Telescope sent to 38.500
07:53:24.87	SWS	38.5	-	-	-	Telescope sent to 39.000
07:53:25.16	SWS	39.0	-	-	-	Telescope sent to 39.500
07:53:25.49	SWS	39.5	-	-	-	Telescope sent to 40.000
07:53:25.84	SWS	40.0	-	-	-	Telescope sent to 40.500
07:53:26.16	SWS	40.5	-	-	-	Telescope sent to 41.000
07:53:26.49	SWS	41.0	-	-	-	Telescope sent to 41.500
07:53:26.82	SWS	41.5	-	-	-	Telescope sent to 42.000
07:53:27.15	SWS	42.0	-	-	-	Telescope sent to 42.500
07:53:27.49	SWS	42.5	-	-	-	Telescope sent to 43.000
07:53:27.82	SWS	43.0	-	-	-	Telescope sent to 43.500
07:53:28.15	SWS	43.5	-	-	-	Telescope sent to 44.000
07:53:28.47	SWS	44.0	-	-	-	Telescope sent to 44.500
07:53:28.80	SWS	44.5	-	-	-	Telescope sent to 45.000
07:53:29.15	SWS	45.0	-	-	-	Telescope sent to 45.500
07:53:29.48	SWS	45.5	-	-	-	Telescope sent to 46.000
07:53:29.81	SWS	46.0	-	-	-	Telescope sent to 46.500
07:53:30.14	SWS	46.5	-	-	-	Telescope sent to 47.000
07:53:30.47	SWS	47.0	-	-	-	Telescope sent to 47.500
07:53:30.79	SWS	47.5	-	-	-	Telescope sent to 48.000
07:53:31.12	SWS	48.0	-	-	-	Telescope sent to 48.500
07:53:31.48	SWS	48.5	-	-	-	Telescope sent to 49.000
07:53:31.81	SWS	49.0	-	-	-	Telescope sent to 49.500
07:53:32.12	SWS	49.5	-	-	-	Telescope sent to 50.000
07:53:32.45	SWS	50.0	-	-	-	Telescope sent to 50.500
07:53:32.77	SWS	50.5	-	-	-	Telescope sent to 51.000
07:53:33.13	SWS	51.0	-	-	-	Telescope sent to 51.500
07:53:33.45	SWS	51.5	-	-	-	Telescope sent to 52.000
07:53:33.77	SWS	52.0	-	-	-	Telescope sent to 52.500
07:53:34.10	SWS	52.5	-	-	-	Telescope sent to 53.000
07:53:34.42	SWS	53.0	-	-	-	Telescope sent to 53.500
07:53:34.75	SWS	53.5	-	-	-	Telescope sent to 54.000
07:53:35.07	SWS	54.0	-	-	-	Telescope sent to 54.500
07:53:35.40	SWS	54.5	-	-	-	Telescope sent to 55.000
07:53:35.72	SWS	55.0	-	-	-	Telescope sent to 55.500
07:53:36.05	SWS	55.5	-	-	-	Telescope sent to 56.000
07:53:36.37	SWS	56.0	-	-	-	Telescope sent to 56.500
07:53:36.69	SWS	56.5	-	-	-	Telescope sent to 57.000
07:53:37.01	SWS	57.0	-	-	-	Telescope sent to 57.500
07:53:37.35	SWS	57.5	-	-	-	Telescope sent to 58.000
07:53:37.67	SWS	58.0	-	-	-	Telescope sent to 58.500
07:53:38.00	SWS	58.5	-	-	-	Telescope sent to 59.000
07:53:38.32	SWS	59.0	-	-	-	Telescope stopped.
07:53:42.26	SWS	59.0	-	-	-	Telescope at scan limit - going to -50.0
07:53:42.67	SWS	56.9	-	-	-	Telescope sent to -50.000
07:53:51.63	SWS	-50.1	-	-	-	Telescope at scan limit - going to 50.0
07:53:55.16	---	-	-	-	-	*** did two manual scans in the end
07:54:00.57	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:54:09.08	SWS	-48.8	-	-	-	Telescope at scan limit - going to 50.0
07:54:17.59	SWS	49.0	-	-	-	Telescope at scan limit - going to -50.0
07:54:26.58	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:54:35.59	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:54:44.14	SWS	-49.4	-	-	-	Telescope at scan limit - going to 50.0
07:54:53.13	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:55:01.70	SWS	-49.6	-	-	-	Telescope at scan limit - going to 50.0
07:55:10.71	SWS	50.0	-	-	-	Telescope at scan limit - going to -50.0
07:55:19.68	SWS	-50.0	-	-	-	Telescope at scan limit - going to 50.0
07:55:28.73	SWS	50.0	-	-	-	Telescope at scan limit - going to -40.0

07:55:36.72	SWS	-40.0	-	-	-	Telescope at scan limit - going to 50.0
07:55:44.59	SWS	50.0	-	-	-	Telescope at scan limit - going to -40.0
07:55:52.49	SWS	-40.0	-	-	-	Telescope at scan limit - going to 50.0
07:56:00.41	---	-	-	-	-	*** mototr making a grinding noise between -40
and -50 so only going to -40						
07:56:00.49	SWS	50.0	-	-	-	Telescope at scan limit - going to -40.0
07:56:08.38	SWS	-40.0	-	-	-	Telescope at scan limit - going to 50.0
07:56:16.24	SWS	50.0	-	-	-	Telescope at scan limit - going to -40.0
07:56:24.13	SWS	-40.0	-	-	-	Telescope at scan limit - going to 50.0
07:56:32.11	SWS	50.0	-	-	-	Telescope at scan limit - going to -40.0
07:56:40.03	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
07:56:48.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
07:56:57.02	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
07:57:05.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
07:57:13.95	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
07:57:22.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
07:57:30.88	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
07:57:39.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
07:57:42.57	SWS	20.7	-	-	-	Telescope stopped.
07:57:47.34	SWS	20.7	-	-	-	Telescope sent to 0.000
07:57:53.05	---	-	-	-	-	*** profile climb
07:58:03.16	---	-	-	-	-	Reset shutters.
07:58:07.25	SWS	-	-	40	40	Dark measurement started.
07:58:07.27	LSH	-	-	40	40	Dark measurement started.
07:58:07.31	USH	-	-	40	40	Dark measurement started.
07:58:08.14	SWS	-	-	40	40	Manual scene recording started.
07:58:08.38	LSH	-	-	40	40	Manual scene recording started.
07:58:08.60	USH	-	-	40	40	Manual scene recording started.
07:58:09.57	USH	-	-	40	40	Dark measurement started.
07:58:09.63	SWS	-	-	40	40	Dark measurement started.
07:58:09.67	LSH	-	-	40	40	Dark measurement started.
07:58:10.22	LSH	-	-	40	40	Dark measurement started.
07:58:10.45	USH	-	-	40	40	Manual scene recording started.
07:58:10.61	SWS	-	-	40	40	Manual scene recording started.
07:58:11.12	LSH	-	-	-	-	Idling
07:58:12.23	LSH	-	-	40	40	Dark measurement started.
07:58:12.25	SWS	-	-	40	40	Dark measurement started.
07:58:12.32	USH	-	-	40	40	Dark measurement started.
07:58:13.07	LSH	-	-	-	-	Idling
07:58:13.32	SWS	-	-	40	40	Manual scene recording started.
07:58:13.54	USH	-	-	40	40	Manual scene recording started.
07:58:16.38	LSH	-	-	40	40	Manual scene recording started.
08:01:32.01	---	-	-	-	-	*** start of run 4
08:01:36.26	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
08:01:36.68	SWS	2.0	-	-	-	Telescope sent to -40.000
08:01:41.14	SWS	54.8	-	-	-	Telescope at scan limit - going to -40.0
08:01:41.83	SWS	46.5	-	-	-	Telescope at scan limit - going to -40.0
08:01:42.55	SWS	37.9	-	-	-	Telescope at scan limit - going to -40.0
08:01:43.26	SWS	29.3	-	-	-	Telescope at scan limit - going to -40.0
08:01:43.94	SWS	20.7	-	-	-	Telescope at scan limit - going to -40.0
08:01:44.65	SWS	12.6	-	-	-	Telescope at scan limit - going to -40.0
08:01:45.32	SWS	4.5	-	-	-	Telescope at scan limit - going to 55.0
08:01:46.02	SWS	-4.2	-	-	-	Telescope at scan limit - going to 55.0
08:01:46.74	SWS	-12.4	-	-	-	Telescope at scan limit - going to 55.0
08:01:47.48	SWS	-21.2	-	-	-	Telescope at scan limit - going to 55.0
08:01:48.21	SWS	-30.0	-	-	-	Telescope at scan limit - going to 55.0
08:01:48.93	SWS	-38.6	-	-	-	Telescope at scan limit - going to 55.0
08:01:52.31	LSH	-	-	40	40	Dark measurement started.
08:01:52.33	SWS	-	-	40	40	Dark measurement started.
08:01:52.38	USH	-	-	40	40	Dark measurement started.
08:01:53.23	LSH	-	-	40	40	Manual scene recording started.
08:01:53.42	SWS	-	-	40	40	Manual scene recording started.
08:01:53.60	USH	-	-	40	40	Manual scene recording started.
08:01:54.78	USH	-	-	40	40	Dark measurement started.
08:01:54.82	LSH	-	-	40	40	Dark measurement started.
08:01:54.85	SWS	-	-	40	40	Dark measurement started.
08:01:55.45	SWS	-	-	40	40	Dark measurement started.
08:01:55.63	USH	-	-	40	40	Manual scene recording started.
08:01:55.85	LSH	-	-	40	40	Manual scene recording started.

08:01:56.34	SWS	-	-	-	-	Idling
08:01:57.54	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:01:59.48	SWS	-	-	40	40	Manual scene recording started.
08:02:06.05	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:02:14.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:02:23.04	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:02:31.49	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:02:39.95	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:02:48.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:02:57.02	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:03:05.50	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:03:13.99	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:03:22.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:03:30.94	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:03:39.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:03:47.95	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:03:56.39	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:04:04.84	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:04:13.34	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:04:21.83	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:04:30.44	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:04:38.93	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:04:47.39	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:04:55.83	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:05:04.30	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:05:12.68	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:05:21.15	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:05:29.61	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:05:38.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:05:46.61	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:05:55.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:06:03.63	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:06:12.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:06:20.56	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:06:29.04	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:06:37.51	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:06:46.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:06:54.67	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:07:03.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:07:11.83	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:07:20.40	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:07:28.94	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:07:37.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:07:46.01	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:07:54.56	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:08:03.06	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:08:11.52	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:08:20.13	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:08:28.67	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:08:37.30	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:08:45.84	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:08:54.28	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:09:02.83	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:09:11.26	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:09:19.85	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:09:28.51	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:09:36.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:09:45.42	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:09:53.86	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:10:02.40	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:10:10.83	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:10:19.28	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:10:27.89	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:10:35.22	---	-	-	-	-	*** over glacier
08:10:36.40	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:10:44.95	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:10:53.38	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:11:02.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:11:10.50	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0

08:11:19.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:11:20.74	---	-	-	-	-	*** nence LSH very high signal -and spectrum
water shapd rather than distinctive land shape						
08:11:27.61	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:11:36.16	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:11:44.67	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:11:53.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:12:01.73	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:12:10.22	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:12:15.35	---	-	-	-	-	*** variability in USH suggesting not 100%
clear skies above - almost clear though						
08:12:18.71	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:12:20.05	---	-	-	-	-	***
08:12:20.83	SWS	-18.7	-	-	-	Telescope stopped.
08:12:25.59	SWS	-18.8	-	-	-	Telescope sent to 0.000
08:14:28.95	---	-	-	-	-	*** over a mixture of snow,ice, rock and
vegetation						
08:14:54.79	---	-	-	-	-	*** some patchy low cloud below as well
08:15:35.56	---	-	-	-	-	*** the low cloud and snow are continuing to
give LSH 'water' peak ebeb thiugh no longer over glaciari						
08:15:54.07	---	-	-	-	-	*** over land now, not change in LSH spectrum
08:16:11.97	---	-	-	-	-	*** should have said 'note' not
08:16:18.74	---	-	-	-	-	*** 'not'
08:16:53.74	---	-	-	-	-	*** more downwelling irradiance over A than
BADEP						
08:19:15.28	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
08:19:15.71	SWS	2.0	-	-	-	Telescope sent to -40.000
08:19:20.15	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:19:20.83	SWS	46.8	-	-	-	Telescope at scan limit - going to -40.0
08:19:21.55	SWS	38.2	-	-	-	Telescope at scan limit - going to -40.0
08:19:22.27	SWS	29.5	-	-	-	Telescope at scan limit - going to -40.0
08:19:22.96	SWS	20.9	-	-	-	Telescope at scan limit - going to -40.0
08:19:23.58	---	-	-	-	-	*** run 5 at FL 250
08:19:23.67	SWS	12.7	-	-	-	Telescope at scan limit - going to -40.0
08:19:24.43	SWS	3.8	-	-	-	Telescope at scan limit - going to 55.0
08:19:25.15	SWS	-4.9	-	-	-	Telescope at scan limit - going to 55.0
08:19:25.88	SWS	-13.7	-	-	-	Telescope at scan limit - going to 55.0
08:19:26.59	SWS	-22.4	-	-	-	Telescope at scan limit - going to 55.0
08:19:27.32	SWS	-31.0	-	-	-	Telescope at scan limit - going to 55.0
08:19:28.05	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
08:19:36.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:19:45.01	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:19:53.60	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:20:02.04	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:20:10.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:20:16.60	---	-	-	-	-	*** dry layer
08:20:19.06	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:20:27.51	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:20:36.05	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:20:44.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:20:53.10	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:21:01.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:21:10.16	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:21:18.71	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:21:26.83	SWS	-39.2	-	-	-	Telescope at scan limit - going to 55.0
08:21:35.40	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:21:43.97	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:21:52.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:22:01.16	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:22:09.79	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:22:18.28	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:22:26.79	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:22:35.33	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:22:43.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:22:52.54	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:23:01.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:23:09.71	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:23:18.31	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:23:26.81	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0

08:23:35.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:23:43.88	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:23:52.41	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:24:00.97	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:24:09.54	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:24:18.08	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:24:26.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:24:35.15	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:24:43.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:24:52.22	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:25:00.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:25:09.32	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:25:17.73	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:25:26.29	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:25:30.81	SWS	10.1	-	-	-	Telescope stopped.
08:25:36.34	SWS	10.1	-	-	-	Telescope sent to 0.000
08:25:37.85	SWS	-0.0	-	-	-	Telescope sent to 0.500
08:25:39.31	SWS	0.5	-	-	-	Telescope sent to 0.000
08:25:39.64	SWS	0.0	-	-	-	Telescope sent to -0.500
08:25:40.01	SWS	-0.5	-	-	-	Telescope sent to -1.000
08:25:40.35	SWS	-1.0	-	-	-	Telescope sent to -1.500
08:25:40.68	SWS	-1.5	-	-	-	Telescope sent to -2.000
08:25:41.55	SWS	-2.0	-	-	-	Telescope sent to -2.500
08:25:42.06	SWS	-2.5	-	-	-	Telescope sent to -3.000
08:25:44.26	SWS	-3.0	-	-	-	Telescope sent to 0.000
08:25:52.96	---	-	-	-	-	*** profile climb
08:26:03.57	---	-	-	-	-	Reset shutters.
08:26:06.80	SWS	-	-	40	40	Dark measurement started.
08:26:06.89	USH	-	-	40	40	Dark measurement started.
08:26:06.90	LSH	-	-	40	40	Dark measurement started.
08:26:07.73	SWS	-	-	40	40	Manual scene recording started.
08:26:07.92	USH	-	-	40	40	Manual scene recording started.
08:26:08.12	SWS	-	-	40	40	Manual scene recording started.
08:26:08.20	LSH	-	-	40	40	Manual scene recording started.
08:26:09.17	USH	-	-	40	40	Dark measurement started.
08:26:09.22	LSH	-	-	40	40	Dark measurement started.
08:26:09.30	SWS	-	-	40	40	Dark measurement started.
08:26:10.05	USH	-	-	40	40	Manual scene recording started.
08:26:10.28	LSH	-	-	40	40	Manual scene recording started.
08:26:10.50	SWS	-	-	40	40	Manual scene recording started.
08:26:19.68	USH	-	-	40	40	Dark measurement started.
08:26:19.74	LSH	-	-	40	40	Dark measurement started.
08:26:19.77	SWS	-	-	40	40	Dark measurement started.
08:26:20.58	USH	-	-	40	40	Manual scene recording started.
08:26:20.74	LSH	-	-	40	40	Manual scene recording started.
08:26:20.97	SWS	-	-	40	40	Manual scene recording started.
08:26:26.13	LSH	-	-	40	40	Dark measurement started.
08:26:26.22	SWS	-	-	40	40	Dark measurement started.
08:26:26.25	USH	-	-	40	40	Dark measurement started.
08:26:26.61	SWS	-	-	40	40	Dark measurement started.
08:26:26.98	LSH	-	-	40	40	Manual scene recording started.
08:26:27.43	USH	-	-	40	40	Manual scene recording started.
08:26:27.64	SWS	-	-	-	-	Idling
08:26:29.37	SWS	-	-	40	40	Manual scene recording started.
08:33:00.71	---	-	-	-	-	*** aerosol layers corresponding to peaks in ozone mixing, probably fine particles
08:33:14.45	SWS	0.0	-	-	-	Telescope sent to -40.000
08:33:17.88	SWS	-39.2	-	-	-	Telescope at scan limit - going to 55.0
08:33:26.07	---	-	-	-	-	*** run 6 at fl 300
08:33:26.46	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:33:35.08	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:33:43.72	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:33:52.34	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:34:00.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:34:08.97	SWS	-38.8	-	-	-	Telescope at scan limit - going to 55.0
08:34:17.58	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:34:26.10	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:34:34.73	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:34:43.19	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0

08:34:51.75	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:35:00.25	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:35:08.90	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:35:17.46	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:35:26.10	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:35:34.22	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
08:35:42.31	SWS	54.0	-	-	-	Telescope at scan limit - going to -40.0
08:35:50.88	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:35:59.47	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:36:08.05	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:36:16.53	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:36:25.01	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:36:33.56	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:36:42.10	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:36:50.74	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:36:59.37	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:37:07.48	SWS	53.9	-	-	-	Telescope at scan limit - going to -40.0
08:37:15.58	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
08:37:24.09	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:37:32.67	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:37:41.28	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:37:49.76	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:37:58.35	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:38:06.46	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:38:14.55	SWS	54.0	-	-	-	Telescope at scan limit - going to -40.0
08:38:22.65	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:38:30.74	SWS	53.8	-	-	-	Telescope at scan limit - going to -40.0
08:38:39.19	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:38:48.08	SWS	55.0	-	-	-	Telescope stopped.
08:38:52.87	SWS	55.0	-	-	-	Telescope sent to 0.000
08:38:54.02	SWS	-0.0	-	-	-	Telescope stopped.
08:42:52.57	---	-	-	-	-	*** start of run 6. 2 at FL 300
08:42:57.43	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
08:42:57.86	SWS	2.1	-	-	-	Telescope sent to -40.000
08:43:02.35	SWS	54.4	-	-	-	Telescope at scan limit - going to -40.0
08:43:03.00	SWS	46.1	-	-	-	Telescope at scan limit - going to -40.0
08:43:03.72	SWS	37.8	-	-	-	Telescope at scan limit - going to -40.0
08:43:04.45	SWS	29.1	-	-	-	Telescope at scan limit - going to -40.0
08:43:05.18	SWS	20.2	-	-	-	Telescope at scan limit - going to -40.0
08:43:05.92	SWS	11.5	-	-	-	Telescope at scan limit - going to -40.0
08:43:06.65	SWS	2.6	-	-	-	Telescope at scan limit - going to 55.0
08:43:07.38	SWS	-6.0	-	-	-	Telescope at scan limit - going to 55.0
08:43:08.11	SWS	-14.8	-	-	-	Telescope at scan limit - going to 55.0
08:43:08.83	SWS	-23.5	-	-	-	Telescope at scan limit - going to 55.0
08:43:09.56	SWS	-32.2	-	-	-	Telescope at scan limit - going to 55.0
08:43:10.28	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:43:18.94	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:43:27.10	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:43:35.74	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:43:42.30	---	-	-	-	-	*** correlations between PCASP CCN o3 and CO,
nothing on neph suggesting small particles						
08:43:44.38	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:43:49.87	SWS	-	-	40	40	Dark measurement started.
08:43:49.92	LSH	-	-	40	40	Dark measurement started.
08:43:50.03	USH	-	-	40	40	Dark measurement started.
08:43:50.37	LSH	-	-	40	40	Dark measurement started.
08:43:50.75	SWS	-	-	40	40	Manual scene recording started.
08:43:51.22	USH	-	-	40	40	Manual scene recording started.
08:43:51.41	LSH	-	-	-	-	Idling
08:43:52.35	LSH	-	-	40	40	Dark measurement started.
08:43:52.39	USH	-	-	40	40	Dark measurement started.
08:43:52.43	SWS	-	-	40	40	Dark measurement started.
08:43:52.46	SWS	53.8	-	-	-	Telescope at scan limit - going to -40.0
08:43:53.20	LSH	-	-	-	-	Idling
08:43:53.42	USH	-	-	40	40	Manual scene recording started.
08:43:53.65	SWS	-	-	40	40	Manual scene recording started.
08:43:55.15	LSH	-	-	40	40	Manual scene recording started.
08:44:01.02	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:44:09.13	SWS	53.4	-	-	-	Telescope at scan limit - going to -40.0

08:44:17.73	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
08:44:25.89	SWS	54.4	-	-	-	Telescope at scan limit - going to -40.0
08:44:34.03	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
08:44:42.67	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:44:50.77	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:44:59.21	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:45:07.76	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:45:16.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:45:24.99	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:45:33.58	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:45:41.71	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
08:45:50.37	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:45:58.46	SWS	-38.8	-	-	-	Telescope at scan limit - going to 55.0
08:46:07.07	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:46:15.69	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:46:24.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:46:32.83	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:46:41.35	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:46:49.46	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:46:58.09	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:47:06.23	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
08:47:14.74	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:47:23.38	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:47:31.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:47:40.58	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:47:49.19	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:47:57.79	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:48:06.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:48:14.51	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
08:48:23.11	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:48:31.23	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
08:48:39.33	SWS	53.8	-	-	-	Telescope at scan limit - going to -40.0
08:48:47.44	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
08:48:56.11	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:49:04.61	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:49:13.21	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:49:21.80	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:49:30.38	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:49:39.00	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:49:47.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:49:56.25	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:50:04.82	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:50:12.95	SWS	-39.0	-	-	-	Telescope at scan limit - going to 55.0
08:50:21.56	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:50:30.21	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:50:38.82	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
08:50:47.46	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:50:55.64	SWS	54.8	-	-	-	Telescope at scan limit - going to -40.0
08:51:04.33	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:51:12.41	SWS	53.8	-	-	-	Telescope at scan limit - going to -40.0
08:51:20.50	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
08:51:28.63	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
08:51:37.28	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
08:51:45.37	SWS	53.9	-	-	-	Telescope at scan limit - going to -40.0
08:51:54.37	SWS	-40.0	-	-	-	Telescope stopped.
08:51:57.55	SWS	-40.0	-	-	-	Telescope sent to 0.000
08:52:07.98	---	-	-	-	-	Reset shutters.
08:52:11.88	LSH	-	-	40	40	Dark measurement started.
08:52:11.94	USH	-	-	40	40	Dark measurement started.
08:52:11.97	SWS	-	-	40	40	Dark measurement started.
08:52:12.39	USH	-	-	40	40	Dark measurement started.
08:52:12.58	SWS	-	-	40	40	Dark measurement started.
08:52:12.75	LSH	-	-	40	40	Manual scene recording started.
08:52:13.37	USH	-	-	-	-	Idling
08:52:13.65	SWS	-	-	-	-	Idling
08:52:14.18	USH	-	-	40	40	Dark measurement started.
08:52:14.19	SWS	-	-	40	40	Dark measurement started.
08:52:14.23	LSH	-	-	40	40	Dark measurement started.
08:52:15.03	USH	-	-	-	-	Idling



08:52:15.24	SWS	-	-	-	-	Idling
08:52:15.46	LSH	-	-	40	40	Manual scene recording started.
08:52:15.75	USH	-	-	40	40	Manual scene recording started.
08:52:15.75	SWS	-	-	40	40	Manual scene recording started.
08:52:35.49	---	-	-	-	-	*** profile 6 from fl 300 to fl 350
08:57:04.57	USH	-	-	40	40	Dark measurement started.
08:57:04.59	SWS	-	-	40	40	Dark measurement started.
08:57:04.60	LSH	-	-	40	40	Dark measurement started.
08:57:05.52	USH	-	-	40	40	Manual scene recording started.
08:57:05.69	SWS	-	-	40	40	Manual scene recording started.
08:57:05.86	LSH	-	-	40	40	Manual scene recording started.
08:57:10.82	LSH	-	-	40	40	Dark measurement started.
08:57:10.84	SWS	-	-	40	40	Dark measurement started.
08:57:10.93	USH	-	-	40	40	Dark measurement started.
08:57:11.68	LSH	-	-	40	40	Manual scene recording started.
08:57:11.91	SWS	-	-	40	40	Manual scene recording started.
08:57:12.16	USH	-	-	40	40	Manual scene recording started.
09:06:22.35	---	-	-	-	-	*** end of profile 6
09:06:33.64	SWS	-	-	40	40	Dark measurement started.
09:06:33.69	USH	-	-	40	40	Dark measurement started.
09:06:33.70	LSH	-	-	40	40	Dark measurement started.
09:06:34.52	SWS	-	-	40	40	Manual scene recording started.
09:06:34.69	USH	-	-	40	40	Manual scene recording started.
09:06:34.95	LSH	-	-	40	40	Manual scene recording started.
09:06:35.53	LSH	-	-	40	40	Dark measurement started.
09:06:35.58	USH	-	-	40	40	Dark measurement started.
09:06:35.66	SWS	-	-	40	40	Dark measurement started.
09:06:36.44	LSH	-	-	40	40	Manual scene recording started.
09:06:36.68	USH	-	-	40	40	Manual scene recording started.
09:06:36.84	SWS	-	-	40	40	Manual scene recording started.
09:06:37.91	USH	-	-	40	40	Dark measurement started.
09:06:37.92	LSH	-	-	40	40	Dark measurement started.
09:06:37.96	SWS	-	-	40	40	Dark measurement started.
09:06:38.77	USH	-	-	40	40	Manual scene recording started.
09:06:39.04	LSH	-	-	40	40	Manual scene recording started.
09:06:39.27	SWS	-	-	40	40	Manual scene recording started.
09:10:32.82	---	-	-	-	-	*** start of run 7 at FL 350 from A to BADEP
09:10:33.35	SWS	0.0	-	-	-	Telescope sent to -40.000
09:10:36.75	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
09:10:37.14	SWS	-	-	40	40	Dark measurement started.
09:10:37.17	USH	-	-	40	40	Dark measurement started.
09:10:37.18	LSH	-	-	40	40	Dark measurement started.
09:10:37.98	SWS	-	-	40	40	Manual scene recording started.
09:10:38.28	USH	-	-	40	40	Manual scene recording started.
09:10:38.50	LSH	-	-	40	40	Manual scene recording started.
09:10:42.48	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:10:45.00	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:10:53.07	SWS	-39.1	-	-	-	Telescope at scan limit - going to 55.0
09:11:01.28	SWS	54.9	-	-	-	Telescope at scan limit - going to -40.0
09:11:09.84	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:11:17.95	SWS	54.2	-	-	-	Telescope at scan limit - going to -40.0
09:11:26.12	SWS	-39.5	-	-	-	Telescope at scan limit - going to 55.0
09:11:33.89	---	-	-	-	-	*** saturating and stray reflections between
about 20 and 40 deg						
09:11:34.76	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:11:43.42	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:11:52.05	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:12:00.19	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
09:12:08.76	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:12:16.84	SWS	-38.8	-	-	-	Telescope at scan limit - going to 55.0
09:12:25.03	SWS	54.8	-	-	-	Telescope at scan limit - going to -40.0
09:12:33.17	SWS	-39.0	-	-	-	Telescope at scan limit - going to 55.0
09:12:41.27	SWS	54.0	-	-	-	Telescope at scan limit - going to -40.0
09:12:48.49	LSH	-	-	40	40	Dark measurement started.
09:12:48.61	USH	-	-	40	40	Dark measurement started.
09:12:48.63	SWS	-	-	40	40	Dark measurement started.
09:12:49.42	LSH	-	-	40	40	Manual scene recording started.
09:12:49.45	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:12:49.65	USH	-	-	40	40	Manual scene recording started.

09:12:49.82	SWS	-	-	40	40	Manual scene recording started.
09:12:57.63	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:13:06.37	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:13:15.08	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:13:23.24	SWS	-39.5	-	-	-	Telescope at scan limit - going to 55.0
09:13:31.37	SWS	54.3	-	-	-	Telescope at scan limit - going to -40.0
09:13:39.48	SWS	-38.7	-	-	-	Telescope at scan limit - going to 55.0
09:13:47.62	SWS	54.3	-	-	-	Telescope at scan limit - going to -40.0
09:13:56.22	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:14:04.36	SWS	54.3	-	-	-	Telescope at scan limit - going to -40.0
09:14:12.45	SWS	-39.0	-	-	-	Telescope at scan limit - going to 55.0
09:14:20.58	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:14:29.24	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:14:37.35	SWS	54.2	-	-	-	Telescope at scan limit - going to -40.0
09:14:45.53	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
09:14:53.61	SWS	53.8	-	-	-	Telescope at scan limit - going to -40.0
09:15:01.75	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
09:15:09.90	SWS	54.5	-	-	-	Telescope at scan limit - going to -40.0
09:15:18.07	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
09:15:26.27	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:15:34.42	SWS	-39.4	-	-	-	Telescope at scan limit - going to 55.0
09:15:42.53	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:15:50.75	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:15:58.86	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:16:07.02	SWS	-39.4	-	-	-	Telescope at scan limit - going to 55.0
09:16:15.18	SWS	54.0	-	-	-	Telescope at scan limit - going to -40.0
09:16:23.32	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
09:16:28.90	---	-	-	-	-	*** going to move telescope manually for a bit
to get a lock on where stray reflec start to occur more precisely						
09:16:30.86	SWS	46.2	-	-	-	Telescope stopped.
09:16:36.29	SWS	46.1	-	-	-	Telescope sent to 55.500
09:16:36.78	SWS	55.5	-	-	-	Telescope sent to 56.000
09:16:37.71	SWS	56.0	-	-	-	Telescope sent to 56.500
09:16:39.17	SWS	56.5	-	-	-	Telescope sent to 57.000
09:16:40.11	SWS	57.0	-	-	-	Telescope sent to 57.500
09:16:40.67	SWS	57.5	-	-	-	Telescope sent to 58.000
09:16:41.56	SWS	58.0	-	-	-	Telescope sent to 58.500
09:16:43.71	SWS	58.5	-	-	-	Telescope sent to 58.000
09:16:44.30	SWS	58.0	-	-	-	Telescope sent to 57.500
09:16:45.21	SWS	57.5	-	-	-	Telescope sent to 57.000
09:16:46.15	SWS	57.0	-	-	-	Telescope sent to 56.500
09:16:47.06	SWS	56.5	-	-	-	Telescope sent to 56.000
09:16:47.65	SWS	56.0	-	-	-	Telescope sent to 55.500
09:16:48.57	SWS	55.5	-	-	-	Telescope sent to 55.000
09:16:48.97	SWS	55.0	-	-	-	Telescope sent to 54.500
09:16:49.88	SWS	54.5	-	-	-	Telescope sent to 54.000
09:16:50.37	SWS	54.0	-	-	-	Telescope sent to 53.500
09:16:51.29	SWS	53.5	-	-	-	Telescope sent to 53.000
09:16:51.74	SWS	53.0	-	-	-	Telescope sent to 52.500
09:16:52.61	SWS	52.5	-	-	-	Telescope sent to 52.000
09:16:58.82	---	-	-	-	-	*** starting now
09:17:02.51	SWS	52.0	-	-	-	Telescope sent to 51.500
09:17:03.00	SWS	51.5	-	-	-	Telescope sent to 51.000
09:17:03.91	SWS	51.0	-	-	-	Telescope sent to 50.500
09:17:04.29	SWS	50.5	-	-	-	Telescope sent to 50.000
09:17:05.17	SWS	50.0	-	-	-	Telescope sent to 49.500
09:17:05.51	SWS	49.5	-	-	-	Telescope sent to 49.000
09:17:06.06	SWS	49.0	-	-	-	Telescope sent to 48.500
09:17:06.64	SWS	48.5	-	-	-	Telescope sent to 48.000
09:17:07.17	SWS	48.0	-	-	-	Telescope sent to 47.500
09:17:07.74	SWS	47.5	-	-	-	Telescope sent to 47.000
09:17:08.29	SWS	47.0	-	-	-	Telescope sent to 46.500
09:17:08.75	SWS	46.5	-	-	-	Telescope sent to 46.000
09:17:09.20	SWS	46.0	-	-	-	Telescope sent to 45.500
09:17:09.76	SWS	45.5	-	-	-	Telescope sent to 45.000
09:17:19.15	---	-	-	-	-	*** getting really odd effects here
09:17:21.98	SWS	45.0	-	-	-	Telescope sent to 44.500
09:17:22.48	SWS	44.5	-	-	-	Telescope sent to 44.000
09:17:23.06	SWS	44.0	-	-	-	Telescope sent to 43.500

09:17:23.59	SWS	43.5	-	-	-	Telescope sent to 43.000
09:17:24.09	SWS	43.0	-	-	-	Telescope sent to 42.500
09:17:25.04	SWS	42.5	-	-	-	Telescope sent to 42.000
09:17:25.38	SWS	42.0	-	-	-	Telescope sent to 41.500
09:17:25.73	SWS	41.5	-	-	-	Telescope sent to 41.000
09:17:26.67	SWS	41.0	-	-	-	Telescope sent to 40.500
09:17:27.25	SWS	40.5	-	-	-	Telescope sent to 40.000
09:17:28.15	SWS	40.0	-	-	-	Telescope sent to 39.500
09:17:29.06	SWS	39.5	-	-	-	Telescope sent to 39.000
09:17:44.60	SWS	39.0	-	-	-	Telescope sent to 38.500
09:17:46.07	SWS	38.5	-	-	-	Telescope sent to 38.000
09:17:46.99	SWS	38.0	-	-	-	Telescope sent to 37.500
09:17:47.90	SWS	37.5	-	-	-	Telescope sent to 37.000
09:17:49.37	SWS	37.0	-	-	-	Telescope sent to 37.500
09:17:50.30	SWS	37.5	-	-	-	Telescope sent to 38.000
09:17:51.88	SWS	38.0	-	-	-	Telescope sent to 38.500
09:17:53.53	SWS	38.5	-	-	-	Telescope sent to 39.000
09:17:55.80	SWS	39.0	-	-	-	Telescope sent to 38.500
09:17:57.29	SWS	38.5	-	-	-	Telescope sent to 38.000
09:17:59.32	SWS	38.0	-	-	-	Telescope sent to 37.500
09:18:00.20	SWS	37.5	-	-	-	Telescope sent to 37.000
09:18:00.67	SWS	37.0	-	-	-	Telescope sent to 36.500
09:18:01.59	SWS	36.5	-	-	-	Telescope sent to 36.000
09:18:02.48	SWS	36.0	-	-	-	Telescope sent to 35.500
09:18:10.25	SWS	35.5	-	-	-	Telescope sent to 35.000
09:18:11.25	SWS	35.0	-	-	-	Telescope sent to 34.500
09:18:12.16	SWS	34.5	-	-	-	Telescope sent to 34.000
09:18:12.54	SWS	34.0	-	-	-	Telescope sent to 33.500
09:18:17.01	---	-	-	-	-	*** rough peak
09:18:19.67	SWS	33.5	-	-	-	Telescope sent to 33.000
09:18:20.20	SWS	33.0	-	-	-	Telescope sent to 32.500
09:18:21.16	SWS	32.5	-	-	-	Telescope sent to 32.000
09:18:21.49	SWS	32.0	-	-	-	Telescope sent to 31.500
09:18:24.27	SWS	31.5	-	-	-	Telescope sent to 31.000
09:18:24.65	SWS	31.0	-	-	-	Telescope sent to 30.500
09:18:25.15	SWS	30.5	-	-	-	Telescope sent to 30.000
09:18:26.04	SWS	30.0	-	-	-	Telescope sent to 29.500
09:18:28.72	SWS	29.5	-	-	-	Telescope sent to 29.000
09:18:30.26	SWS	29.0	-	-	-	Telescope sent to 29.500
09:18:38.90	---	-	-	-	-	*** almost back to normal
09:18:41.39	SWS	29.5	-	-	-	Telescope sent to 29.000
09:18:42.29	SWS	29.0	-	-	-	Telescope sent to 28.500
09:18:43.26	SWS	28.5	-	-	-	Telescope sent to 28.000
09:18:44.71	SWS	28.0	-	-	-	Telescope sent to 27.500
09:18:46.28	SWS	27.5	-	-	-	Telescope sent to 27.000
09:18:47.17	SWS	27.0	-	-	-	Telescope sent to 26.500
09:18:48.11	SWS	26.5	-	-	-	Telescope sent to 26.000
09:18:49.02	SWS	26.0	-	-	-	Telescope sent to 25.500
09:18:49.40	SWS	25.5	-	-	-	Telescope sent to 25.000
09:18:50.32	SWS	25.0	-	-	-	Telescope sent to 24.500
09:18:51.79	SWS	24.5	-	-	-	Telescope sent to 24.000
09:18:53.28	SWS	24.0	-	-	-	Telescope sent to 23.500
09:19:02.09	---	-	-	-	-	*** fully back to normal here
09:19:04.35	SWS	23.5	-	-	-	Telescope sent to 23.000
09:19:04.70	SWS	23.0	-	-	-	Telescope sent to 22.500
09:19:05.07	SWS	22.5	-	-	-	Telescope sent to 22.000
09:19:05.43	SWS	22.0	-	-	-	Telescope sent to 21.500
09:19:05.81	SWS	21.5	-	-	-	Telescope sent to 21.000
09:19:06.19	SWS	21.0	-	-	-	Telescope sent to 20.500
09:19:06.50	SWS	20.5	-	-	-	Telescope sent to 20.000
09:19:06.86	SWS	20.0	-	-	-	Telescope sent to 19.500
09:19:07.21	SWS	19.5	-	-	-	Telescope sent to 19.000
09:19:07.56	SWS	19.0	-	-	-	Telescope sent to 18.500
09:19:07.91	SWS	18.5	-	-	-	Telescope sent to 18.000
09:19:08.21	SWS	18.0	-	-	-	Telescope sent to 17.500
09:19:08.56	SWS	17.5	-	-	-	Telescope sent to 17.000
09:19:08.90	SWS	17.0	-	-	-	Telescope sent to 16.500
09:19:09.29	SWS	16.5	-	-	-	Telescope sent to 16.000
09:19:09.63	SWS	16.0	-	-	-	Telescope sent to 15.500

09:19:09.96	SWS	15.5	-	-	-	Telescope sent to 15.000
09:19:10.29	SWS	15.0	-	-	-	Telescope sent to 14.500
09:19:10.65	SWS	14.5	-	-	-	Telescope sent to 14.000
09:19:11.07	SWS	14.0	-	-	-	Telescope sent to 13.500
09:19:11.42	SWS	13.5	-	-	-	Telescope sent to 13.000
09:19:11.77	SWS	13.0	-	-	-	Telescope sent to 12.500
09:19:12.16	SWS	12.5	-	-	-	Telescope sent to 12.000
09:19:12.52	SWS	12.0	-	-	-	Telescope sent to 11.500
09:19:12.86	SWS	11.5	-	-	-	Telescope sent to 11.000
09:19:13.21	SWS	11.0	-	-	-	Telescope sent to 10.500
09:19:13.56	SWS	10.5	-	-	-	Telescope sent to 10.000
09:19:13.92	SWS	10.0	-	-	-	Telescope sent to 9.500
09:19:14.27	SWS	9.5	-	-	-	Telescope sent to 9.000
09:19:14.62	SWS	9.0	-	-	-	Telescope sent to 8.500
09:19:14.98	SWS	8.5	-	-	-	Telescope sent to 8.000
09:19:15.33	SWS	8.0	-	-	-	Telescope sent to 7.500
09:19:15.69	SWS	7.5	-	-	-	Telescope sent to 7.000
09:19:16.08	SWS	7.0	-	-	-	Telescope sent to 6.500
09:19:16.45	SWS	6.5	-	-	-	Telescope sent to 6.000
09:19:16.82	SWS	6.0	-	-	-	Telescope sent to 5.500
09:19:17.17	SWS	5.5	-	-	-	Telescope sent to 5.000
09:19:17.50	SWS	5.0	-	-	-	Telescope sent to 4.500
09:19:17.84	SWS	4.5	-	-	-	Telescope sent to 4.000
09:19:18.17	SWS	4.0	-	-	-	Telescope sent to 3.500
09:19:18.52	SWS	3.5	-	-	-	Telescope sent to 3.000
09:19:18.86	SWS	3.0	-	-	-	Telescope sent to 2.500
09:19:19.21	SWS	2.5	-	-	-	Telescope sent to 2.000
09:19:19.55	SWS	2.0	-	-	-	Telescope sent to 1.500
09:19:19.86	SWS	1.5	-	-	-	Telescope sent to 1.000
09:19:20.21	SWS	1.0	-	-	-	Telescope sent to 0.500
09:19:20.54	SWS	0.5	-	-	-	Telescope sent to 0.000
09:19:20.89	SWS	-0.0	-	-	-	Telescope sent to -0.500
09:19:21.22	SWS	-0.5	-	-	-	Telescope sent to -1.000
09:19:21.58	SWS	-1.0	-	-	-	Telescope sent to -1.500
09:19:21.92	SWS	-1.5	-	-	-	Telescope sent to -2.000
09:19:22.26	SWS	-2.0	-	-	-	Telescope sent to -2.500
09:19:22.60	SWS	-2.5	-	-	-	Telescope sent to -3.000
09:19:22.94	SWS	-3.0	-	-	-	Telescope sent to -3.500
09:19:23.27	SWS	-3.5	-	-	-	Telescope sent to -4.000
09:19:23.61	SWS	-4.0	-	-	-	Telescope sent to -4.500
09:19:23.96	SWS	-4.5	-	-	-	Telescope sent to -5.000
09:19:24.29	SWS	-5.0	-	-	-	Telescope sent to -5.500
09:19:24.63	SWS	-5.5	-	-	-	Telescope sent to -6.000
09:19:24.98	SWS	-6.0	-	-	-	Telescope sent to -6.500
09:19:25.32	SWS	-6.5	-	-	-	Telescope sent to -7.000
09:19:25.65	SWS	-7.0	-	-	-	Telescope sent to -7.500
09:19:25.99	SWS	-7.5	-	-	-	Telescope sent to -8.000
09:19:26.37	SWS	-8.1	-	-	-	Telescope sent to -8.500
09:19:26.72	SWS	-8.5	-	-	-	Telescope sent to -9.000
09:19:27.06	SWS	-9.0	-	-	-	Telescope sent to -9.500
09:19:27.42	SWS	-9.5	-	-	-	Telescope sent to -10.000
09:19:27.76	SWS	-10.1	-	-	-	Telescope sent to -10.500
09:19:28.11	SWS	-10.5	-	-	-	Telescope sent to -11.000
09:19:43.15	SWS	-11.0	-	-	-	Telescope sent to -11.500
09:19:44.64	SWS	-11.5	-	-	-	Telescope sent to -12.000
09:19:44.98	SWS	-12.0	-	-	-	Telescope sent to -12.500
09:19:45.48	SWS	-12.5	-	-	-	Telescope sent to -13.000
09:19:46.39	SWS	-13.0	-	-	-	Telescope sent to -13.500
09:19:47.30	SWS	-13.5	-	-	-	Telescope sent to -14.000
09:19:47.64	SWS	-14.0	-	-	-	Telescope sent to -14.500
09:19:51.17	SWS	-14.5	-	-	-	Telescope sent to -15.000
09:19:51.65	SWS	-15.0	-	-	-	Telescope sent to -15.500
09:19:52.11	SWS	-15.5	-	-	-	Telescope sent to -16.000
09:19:52.47	SWS	-16.1	-	-	-	Telescope sent to -16.500
09:19:52.79	SWS	-16.5	-	-	-	Telescope sent to -17.000
09:19:53.16	SWS	-17.0	-	-	-	Telescope sent to -17.500
09:19:53.50	SWS	-17.5	-	-	-	Telescope sent to -18.000
09:19:53.86	SWS	-18.0	-	-	-	Telescope sent to -18.500
09:19:54.22	SWS	-18.5	-	-	-	Telescope sent to -19.000

09:19:54.59	SWS	-19.1	-	-	-	Telescope sent to -19.500
09:19:54.96	SWS	-19.5	-	-	-	Telescope sent to -20.000
09:19:55.32	SWS	-20.0	-	-	-	Telescope sent to -20.500
09:19:55.69	SWS	-20.5	-	-	-	Telescope sent to -21.000
09:19:56.05	SWS	-21.0	-	-	-	Telescope sent to -21.500
09:19:56.41	SWS	-21.5	-	-	-	Telescope sent to -22.000
09:19:56.76	SWS	-22.0	-	-	-	Telescope sent to -22.500
09:19:57.09	SWS	-22.5	-	-	-	Telescope sent to -23.000
09:19:57.45	SWS	-23.0	-	-	-	Telescope sent to -23.500
09:19:57.79	SWS	-23.5	-	-	-	Telescope sent to -24.000
09:19:58.16	SWS	-24.0	-	-	-	Telescope sent to -24.500
09:19:58.52	SWS	-24.5	-	-	-	Telescope sent to -25.000
09:19:58.88	SWS	-25.0	-	-	-	Telescope sent to -25.500
09:19:59.21	SWS	-25.5	-	-	-	Telescope sent to -26.000
09:19:59.56	SWS	-26.0	-	-	-	Telescope sent to -26.500
09:19:59.86	SWS	-26.5	-	-	-	Telescope sent to -27.000
09:20:00.21	SWS	-27.0	-	-	-	Telescope sent to -27.500
09:20:00.57	SWS	-27.5	-	-	-	Telescope sent to -28.000
09:20:00.93	SWS	-28.0	-	-	-	Telescope sent to -28.500
09:20:01.27	SWS	-28.5	-	-	-	Telescope sent to -29.000
09:20:01.65	SWS	-29.0	-	-	-	Telescope sent to -29.500
09:20:02.00	SWS	-29.5	-	-	-	Telescope sent to -30.000
09:20:02.39	SWS	-30.0	-	-	-	Telescope sent to -30.500
09:20:02.77	SWS	-30.5	-	-	-	Telescope sent to -31.000
09:20:03.18	SWS	-31.1	-	-	-	Telescope sent to -31.500
09:20:03.54	SWS	-31.5	-	-	-	Telescope sent to -32.000
09:20:03.90	SWS	-32.0	-	-	-	Telescope sent to -32.500
09:20:04.28	SWS	-32.5	-	-	-	Telescope sent to -33.000
09:20:04.63	SWS	-33.1	-	-	-	Telescope sent to -33.500
09:20:05.00	SWS	-33.5	-	-	-	Telescope sent to -34.000
09:20:05.39	SWS	-34.1	-	-	-	Telescope sent to -34.500
09:20:05.75	SWS	-34.5	-	-	-	Telescope sent to -35.000
09:20:06.11	SWS	-35.0	-	-	-	Telescope sent to -35.500
09:20:06.45	SWS	-35.5	-	-	-	Telescope sent to -36.000
09:20:06.80	SWS	-36.0	-	-	-	Telescope sent to -36.500
09:20:07.15	SWS	-36.5	-	-	-	Telescope sent to -37.000
09:20:07.49	SWS	-37.1	-	-	-	Telescope sent to -37.500
09:20:07.83	SWS	-37.5	-	-	-	Telescope sent to -38.000
09:20:08.18	SWS	-38.1	-	-	-	Telescope sent to -38.500
09:20:08.52	SWS	-38.6	-	-	-	Telescope sent to -39.000
09:20:08.87	SWS	-39.1	-	-	-	Telescope sent to -39.500
09:20:09.21	SWS	-39.6	-	-	-	Telescope sent to -40.000
09:20:09.54	SWS	-40.0	-	-	-	Telescope sent to -40.500
09:20:09.88	SWS	-40.6	-	-	-	Telescope sent to -41.000
09:20:10.21	SWS	-41.1	-	-	-	Telescope sent to -41.500
09:20:10.56	SWS	-41.5	-	-	-	Telescope sent to -42.000
09:20:10.90	SWS	-42.0	-	-	-	Telescope sent to -42.500
09:20:11.25	SWS	-42.6	-	-	-	Telescope sent to -43.000
09:20:11.60	SWS	-43.0	-	-	-	Telescope sent to -43.500
09:20:11.94	SWS	-43.5	-	-	-	Telescope sent to -44.000
09:20:14.61	SWS	-44.0	-	-	-	Telescope sent to -44.500
09:20:14.95	SWS	-44.5	-	-	-	Telescope sent to -45.000
09:20:16.44	SWS	-45.0	-	-	-	Telescope sent to -44.500
09:20:16.82	SWS	-44.5	-	-	-	Telescope sent to -44.000
09:20:17.15	SWS	-43.9	-	-	-	Telescope sent to -43.500
09:20:17.52	SWS	-43.5	-	-	-	Telescope sent to -43.000
09:20:17.84	SWS	-43.0	-	-	-	Telescope sent to -42.500
09:20:18.16	SWS	-42.5	-	-	-	Telescope sent to -42.000
09:20:18.52	SWS	-42.0	-	-	-	Telescope sent to -41.500
09:20:18.88	SWS	-41.5	-	-	-	Telescope sent to -41.000
09:20:19.27	SWS	-41.0	-	-	-	Telescope sent to -40.500
09:20:19.63	SWS	-40.5	-	-	-	Telescope sent to -40.000
09:20:20.00	SWS	-40.0	-	-	-	Telescope sent to -39.500
09:20:20.38	SWS	-39.5	-	-	-	Telescope sent to -39.000
09:20:20.70	SWS	-39.0	-	-	-	Telescope sent to -38.500
09:20:21.10	SWS	-38.5	-	-	-	Telescope sent to -38.000
09:20:21.47	SWS	-38.0	-	-	-	Telescope sent to -37.500
09:20:21.82	SWS	-37.5	-	-	-	Telescope sent to -37.000
09:20:22.16	SWS	-37.0	-	-	-	Telescope sent to -36.500

09:20:22.51	SWS	-36.5	-	-	-	Telescope sent to -36.000
09:20:22.82	SWS	-36.0	-	-	-	Telescope sent to -35.500
09:20:23.14	SWS	-35.5	-	-	-	Telescope sent to -35.000
09:20:23.48	SWS	-35.0	-	-	-	Telescope sent to -34.500
09:20:23.82	SWS	-34.5	-	-	-	Telescope sent to -34.000
09:20:24.19	SWS	-34.0	-	-	-	Telescope sent to -33.500
09:20:24.57	SWS	-33.5	-	-	-	Telescope sent to -33.000
09:20:24.89	SWS	-33.0	-	-	-	Telescope sent to -32.500
09:20:25.23	SWS	-32.5	-	-	-	Telescope sent to -32.000
09:20:25.58	SWS	-32.0	-	-	-	Telescope sent to -31.500
09:20:25.92	SWS	-31.5	-	-	-	Telescope sent to -31.000
09:20:26.29	SWS	-31.0	-	-	-	Telescope sent to -30.500
09:20:26.63	SWS	-30.5	-	-	-	Telescope sent to -30.000
09:20:27.00	SWS	-30.0	-	-	-	Telescope sent to -29.500
09:20:27.35	SWS	-29.5	-	-	-	Telescope sent to -29.000
09:20:27.69	SWS	-29.0	-	-	-	Telescope sent to -28.500
09:20:28.07	SWS	-28.5	-	-	-	Telescope sent to -28.000
09:20:28.42	SWS	-28.0	-	-	-	Telescope sent to -27.500
09:20:28.76	SWS	-27.5	-	-	-	Telescope sent to -27.000
09:20:29.11	SWS	-27.0	-	-	-	Telescope sent to -26.500
09:20:29.46	SWS	-26.5	-	-	-	Telescope sent to -26.000
09:20:29.80	SWS	-26.0	-	-	-	Telescope sent to -25.500
09:20:30.18	SWS	-25.5	-	-	-	Telescope sent to -25.000
09:20:30.52	SWS	-25.0	-	-	-	Telescope sent to -24.500
09:20:30.87	SWS	-24.5	-	-	-	Telescope sent to -24.000
09:20:31.21	SWS	-24.0	-	-	-	Telescope sent to -23.500
09:20:31.57	SWS	-23.5	-	-	-	Telescope sent to -23.000
09:20:31.92	SWS	-23.0	-	-	-	Telescope sent to -22.500
09:20:32.29	SWS	-22.5	-	-	-	Telescope sent to -22.000
09:20:32.67	SWS	-22.0	-	-	-	Telescope sent to -21.500
09:20:33.01	SWS	-21.5	-	-	-	Telescope sent to -21.000
09:20:33.42	SWS	-21.0	-	-	-	Telescope sent to -20.500
09:20:33.77	SWS	-20.5	-	-	-	Telescope sent to -20.000
09:20:34.14	SWS	-20.0	-	-	-	Telescope sent to -19.500
09:20:34.49	SWS	-19.5	-	-	-	Telescope sent to -19.000
09:20:34.83	SWS	-19.0	-	-	-	Telescope sent to -18.500
09:20:35.14	SWS	-18.5	-	-	-	Telescope sent to -18.000
09:20:35.49	SWS	-18.0	-	-	-	Telescope sent to -17.500
09:20:35.84	SWS	-17.5	-	-	-	Telescope sent to -17.000
09:20:36.14	SWS	-17.0	-	-	-	Telescope sent to -16.500
09:20:36.49	SWS	-16.5	-	-	-	Telescope sent to -16.000
09:20:43.08	SWS	-16.0	-	-	-	Telescope sent to 0.000
09:23:39.09	---	-	-	-	-	*** reciprocal run at FL 350 from BADEP to A
09:23:52.38	---	-	-	-	-	*** run 7.2
09:23:55.24	SWS	0.0	-	-	-	Telescope sent to -40.000
09:23:58.62	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:23:58.70	SWS	-39.5	-	-	-	Telescope at scan limit - going to 55.0
09:24:07.35	SWS	55.1	-	-	-	Telescope at scan limit - going to -40.0
09:24:15.51	SWS	-39.8	-	-	-	Telescope at scan limit - going to 55.0
09:24:19.86	SWS	8.1	-	-	-	Telescope stopped.
09:24:25.31	SWS	8.1	-	-	-	Telescope sent to 54.500
09:24:25.68	SWS	27.2	-	-	-	Telescope sent to 54.000
09:24:26.03	SWS	54.2	-	-	-	Telescope sent to 53.500
09:24:28.12	SWS	53.5	-	-	-	Telescope sent to 54.000
09:24:28.44	SWS	54.0	-	-	-	Telescope sent to 54.500
09:24:28.79	SWS	54.5	-	-	-	Telescope sent to 55.000
09:24:29.17	SWS	55.0	-	-	-	Telescope sent to 55.500
09:24:29.52	SWS	55.5	-	-	-	Telescope sent to 56.000
09:24:30.37	SWS	56.0	-	-	-	Telescope sent to 56.500
09:24:30.74	SWS	56.5	-	-	-	Telescope sent to 57.000
09:24:31.12	SWS	57.0	-	-	-	Telescope sent to 57.500
09:24:31.47	SWS	57.5	-	-	-	Telescope sent to 58.000
09:24:31.81	SWS	58.0	-	-	-	Telescope sent to 58.500
09:24:33.27	SWS	58.5	-	-	-	Telescope sent to 59.000
09:24:34.87	SWS	59.0	-	-	-	Telescope sent to 58.500
09:24:35.26	SWS	58.5	-	-	-	Telescope sent to 58.000
09:24:35.63	SWS	58.0	-	-	-	Telescope sent to 57.500
09:24:35.94	SWS	57.5	-	-	-	Telescope sent to 57.000
09:24:36.31	SWS	57.0	-	-	-	Telescope sent to 56.500

09:24:36.68	SWS	56.5	-	-	-	Telescope sent to 56.000
09:24:37.05	SWS	56.0	-	-	-	Telescope sent to 55.500
09:24:37.40	SWS	55.5	-	-	-	Telescope sent to 55.000
09:24:37.79	SWS	55.0	-	-	-	Telescope sent to 54.500
09:24:38.14	SWS	54.5	-	-	-	Telescope sent to 54.000
09:24:38.48	SWS	54.0	-	-	-	Telescope sent to 53.500
09:24:38.82	SWS	53.5	-	-	-	Telescope sent to 53.000
09:24:39.17	SWS	53.0	-	-	-	Telescope sent to 52.500
09:24:39.52	SWS	52.5	-	-	-	Telescope sent to 52.000
09:24:39.87	SWS	52.0	-	-	-	Telescope sent to 51.500
09:24:40.19	SWS	51.5	-	-	-	Telescope sent to 51.000
09:24:40.53	SWS	51.0	-	-	-	Telescope sent to 50.500
09:24:40.91	SWS	50.5	-	-	-	Telescope sent to 50.000
09:24:41.26	SWS	50.0	-	-	-	Telescope sent to 49.500
09:24:41.61	SWS	49.5	-	-	-	Telescope sent to 103.500
09:24:41.97	SWS	66.3	-	-	-	Telescope sent to 103.000
09:24:42.29	SWS	102.9	-	-	-	Telescope sent to 102.500
09:24:42.63	SWS	102.5	-	-	-	Telescope sent to 102.000
09:24:44.08	SWS	102.0	-	-	-	Telescope sent to 101.500
09:24:44.45	SWS	101.5	-	-	-	Telescope sent to 101.000
09:24:44.80	SWS	101.0	-	-	-	Telescope sent to 100.500
09:24:45.20	SWS	100.5	-	-	-	Telescope sent to 100.000
09:24:45.57	SWS	100.0	-	-	-	Telescope sent to 99.500
09:24:45.94	SWS	99.5	-	-	-	Telescope sent to 99.000
09:24:46.28	SWS	99.0	-	-	-	Telescope sent to 98.500
09:24:46.65	SWS	98.5	-	-	-	Telescope sent to 98.000
09:24:47.00	SWS	98.0	-	-	-	Telescope sent to 97.500
09:24:47.36	SWS	97.5	-	-	-	Telescope sent to 97.000
09:24:47.71	SWS	97.0	-	-	-	Telescope sent to 96.500
09:24:48.06	SWS	96.5	-	-	-	Telescope sent to 96.000
09:24:48.42	SWS	96.0	-	-	-	Telescope sent to 95.500
09:24:48.77	SWS	95.5	-	-	-	Telescope sent to 95.000
09:24:49.13	SWS	95.0	-	-	-	Telescope sent to 94.500
09:24:49.48	SWS	94.5	-	-	-	Telescope sent to 94.000
09:24:52.60	SWS	94.0	-	-	-	Telescope sent to 30.000
09:24:53.74	SWS	30.0	-	-	-	Telescope stopped.
09:24:56.47	SWS	30.0	-	-	-	Telescope sent to 29.500
09:24:57.99	SWS	29.5	-	-	-	Telescope sent to 29.000
09:24:58.31	SWS	29.0	-	-	-	Telescope sent to 28.500
09:24:58.63	SWS	28.5	-	-	-	Telescope sent to 28.000
09:24:58.97	SWS	28.0	-	-	-	Telescope sent to 27.500
09:24:59.30	SWS	27.5	-	-	-	Telescope sent to 27.000
09:24:59.65	SWS	27.0	-	-	-	Telescope sent to 26.500
09:25:00.00	SWS	26.5	-	-	-	Telescope sent to 26.000
09:25:00.37	SWS	26.0	-	-	-	Telescope sent to 25.500
09:25:00.72	SWS	25.5	-	-	-	Telescope sent to 25.000
09:25:01.06	SWS	25.0	-	-	-	Telescope sent to 24.500
09:25:01.42	SWS	24.5	-	-	-	Telescope sent to 24.000
09:25:01.79	SWS	24.0	-	-	-	Telescope sent to 23.500
09:25:02.19	SWS	23.5	-	-	-	Telescope sent to 23.000
09:25:02.53	SWS	23.0	-	-	-	Telescope sent to 22.500
09:25:02.87	SWS	22.5	-	-	-	Telescope sent to 22.000
09:25:03.18	SWS	22.0	-	-	-	Telescope sent to 21.500
09:25:03.52	SWS	21.5	-	-	-	Telescope sent to 21.000
09:25:03.91	SWS	21.0	-	-	-	Telescope sent to 20.500
09:25:04.27	SWS	20.5	-	-	-	Telescope sent to 20.000
09:25:04.62	SWS	20.0	-	-	-	Telescope sent to 19.500
09:25:04.97	SWS	19.5	-	-	-	Telescope sent to 19.000
09:25:05.34	SWS	19.0	-	-	-	Telescope sent to 18.500
09:25:05.68	SWS	18.5	-	-	-	Telescope sent to 18.000
09:25:06.03	SWS	18.0	-	-	-	Telescope sent to 17.500
09:25:06.42	SWS	17.5	-	-	-	Telescope sent to 17.000
09:25:06.79	SWS	17.0	-	-	-	Telescope sent to 16.500
09:25:07.21	SWS	16.5	-	-	-	Telescope sent to 16.000
09:25:07.58	SWS	16.0	-	-	-	Telescope sent to 15.500
09:25:07.93	SWS	15.5	-	-	-	Telescope sent to 15.000
09:25:08.30	SWS	15.0	-	-	-	Telescope sent to 14.500
09:25:08.65	SWS	14.5	-	-	-	Telescope sent to 14.000
09:25:09.02	SWS	14.0	-	-	-	Telescope sent to 13.500

09:25:09.46	SWS	13.5	-	-	-	Telescope sent to 13.000
09:25:09.81	SWS	13.0	-	-	-	Telescope sent to 12.500
09:25:10.17	SWS	12.5	-	-	-	Telescope sent to 12.000
09:25:10.58	SWS	12.0	-	-	-	Telescope sent to 11.500
09:25:10.95	SWS	11.5	-	-	-	Telescope sent to 11.000
09:25:11.28	SWS	11.0	-	-	-	Telescope sent to 10.500
09:25:11.61	SWS	10.5	-	-	-	Telescope sent to 10.000
09:25:11.92	SWS	10.0	-	-	-	Telescope sent to 9.500
09:25:12.30	SWS	9.5	-	-	-	Telescope sent to 9.000
09:25:12.66	SWS	9.0	-	-	-	Telescope sent to 8.500
09:25:13.00	SWS	8.4	-	-	-	Telescope sent to 8.000
09:25:13.38	SWS	8.0	-	-	-	Telescope sent to 7.500
09:25:13.75	SWS	7.5	-	-	-	Telescope sent to 7.000
09:25:14.09	SWS	7.0	-	-	-	Telescope sent to 6.500
09:25:14.46	SWS	6.5	-	-	-	Telescope sent to 6.000
09:25:14.80	SWS	6.0	-	-	-	Telescope sent to 5.500
09:25:15.16	SWS	5.5	-	-	-	Telescope sent to 5.000
09:25:15.52	SWS	5.0	-	-	-	Telescope sent to 4.500
09:25:15.87	SWS	4.5	-	-	-	Telescope sent to 4.000
09:25:16.27	SWS	4.0	-	-	-	Telescope sent to 3.500
09:25:16.65	SWS	3.5	-	-	-	Telescope sent to 3.000
09:25:17.02	SWS	3.0	-	-	-	Telescope sent to 2.500
09:25:17.41	SWS	2.5	-	-	-	Telescope sent to 2.000
09:25:17.71	SWS	2.0	-	-	-	Telescope sent to 1.500
09:25:18.06	SWS	1.5	-	-	-	Telescope sent to 1.000
09:25:18.41	SWS	1.0	-	-	-	Telescope sent to 0.500
09:25:18.72	SWS	0.5	-	-	-	Telescope sent to 0.000
09:25:19.08	SWS	-0.0	-	-	-	Telescope sent to -0.500
09:25:19.44	SWS	-0.5	-	-	-	Telescope sent to -1.000
09:25:19.78	SWS	-1.0	-	-	-	Telescope sent to -1.500
09:25:20.15	SWS	-1.5	-	-	-	Telescope sent to -2.000
09:25:20.50	SWS	-2.0	-	-	-	Telescope sent to -2.500
09:25:20.84	SWS	-2.5	-	-	-	Telescope sent to -3.000
09:25:21.17	SWS	-3.0	-	-	-	Telescope sent to -3.500
09:25:21.53	SWS	-3.5	-	-	-	Telescope sent to -4.000
09:25:21.88	SWS	-4.1	-	-	-	Telescope sent to -4.500
09:25:22.18	SWS	-4.5	-	-	-	Telescope sent to -5.000
09:25:22.55	SWS	-5.0	-	-	-	Telescope sent to -5.500
09:25:22.92	SWS	-5.5	-	-	-	Telescope sent to -6.000
09:25:23.28	SWS	-6.0	-	-	-	Telescope sent to -6.500
09:25:23.63	SWS	-6.5	-	-	-	Telescope sent to -7.000
09:25:23.98	SWS	-7.0	-	-	-	Telescope sent to -7.500
09:25:24.40	SWS	-7.6	-	-	-	Telescope sent to -8.000
09:25:24.74	SWS	-8.0	-	-	-	Telescope sent to -8.500
09:25:25.12	SWS	-8.5	-	-	-	Telescope sent to -9.000
09:25:25.51	SWS	-9.0	-	-	-	Telescope sent to -9.500
09:25:25.85	SWS	-9.5	-	-	-	Telescope sent to -10.000
09:25:26.18	SWS	-10.0	-	-	-	Telescope sent to -10.500
09:25:26.55	SWS	-10.5	-	-	-	Telescope sent to -11.000
09:25:26.93	SWS	-11.0	-	-	-	Telescope sent to -11.500
09:25:27.28	SWS	-11.5	-	-	-	Telescope sent to -12.000
09:25:27.65	SWS	-12.0	-	-	-	Telescope sent to -12.500
09:25:27.98	SWS	-12.5	-	-	-	Telescope sent to -13.000
09:25:28.30	SWS	-13.0	-	-	-	Telescope sent to -13.500
09:25:28.66	SWS	-13.5	-	-	-	Telescope sent to -14.000
09:25:28.98	SWS	-14.0	-	-	-	Telescope sent to -14.500
09:25:29.35	SWS	-14.5	-	-	-	Telescope sent to -15.000
09:25:29.71	SWS	-15.0	-	-	-	Telescope sent to -15.500
09:25:30.11	SWS	-15.5	-	-	-	Telescope sent to -16.000
09:25:30.49	SWS	-16.1	-	-	-	Telescope sent to -16.500
09:25:30.85	SWS	-16.5	-	-	-	Telescope sent to -17.000
09:25:31.20	SWS	-17.1	-	-	-	Telescope sent to -17.500
09:25:31.58	SWS	-17.5	-	-	-	Telescope sent to -18.000
09:25:31.93	SWS	-18.0	-	-	-	Telescope sent to -18.500
09:25:32.31	SWS	-18.5	-	-	-	Telescope sent to -19.000
09:25:32.67	SWS	-19.1	-	-	-	Telescope sent to -19.500
09:25:33.05	SWS	-19.6	-	-	-	Telescope sent to -20.000
09:25:33.40	SWS	-20.0	-	-	-	Telescope sent to -20.500
09:25:33.75	SWS	-20.5	-	-	-	Telescope sent to -21.000



09:25:34.10	SWS	-21.0	-	-	-	Telescope sent to -21.500
09:25:34.46	SWS	-21.5	-	-	-	Telescope sent to -22.000
09:25:34.80	SWS	-22.0	-	-	-	Telescope sent to -22.500
09:25:35.21	SWS	-22.5	-	-	-	Telescope sent to -23.000
09:25:35.56	SWS	-23.0	-	-	-	Telescope sent to -23.500
09:25:35.91	SWS	-23.5	-	-	-	Telescope sent to -24.000
09:25:36.31	SWS	-24.0	-	-	-	Telescope sent to -24.500
09:25:36.66	SWS	-24.5	-	-	-	Telescope sent to -25.000
09:25:37.02	SWS	-25.0	-	-	-	Telescope sent to -25.500
09:25:37.42	SWS	-25.5	-	-	-	Telescope sent to -26.000
09:25:37.77	SWS	-26.0	-	-	-	Telescope sent to -26.500
09:25:38.12	SWS	-26.6	-	-	-	Telescope sent to -27.000
09:25:38.47	SWS	-27.0	-	-	-	Telescope sent to -27.500
09:25:38.84	SWS	-27.5	-	-	-	Telescope sent to -28.000
09:25:39.19	SWS	-28.0	-	-	-	Telescope sent to -28.500
09:25:39.55	SWS	-28.5	-	-	-	Telescope sent to -29.000
09:25:39.94	SWS	-29.1	-	-	-	Telescope sent to -29.500
09:25:40.30	SWS	-29.5	-	-	-	Telescope sent to -30.000
09:25:40.65	SWS	-30.0	-	-	-	Telescope sent to -30.500
09:25:41.01	SWS	-30.5	-	-	-	Telescope sent to -31.000
09:25:41.38	SWS	-31.0	-	-	-	Telescope sent to -31.500
09:25:41.73	SWS	-31.5	-	-	-	Telescope sent to -32.000
09:25:42.10	SWS	-32.1	-	-	-	Telescope sent to -32.500
09:25:42.45	SWS	-32.5	-	-	-	Telescope sent to -33.000
09:25:42.80	SWS	-33.0	-	-	-	Telescope sent to -33.500
09:25:43.16	SWS	-33.5	-	-	-	Telescope sent to -34.000
09:25:43.51	SWS	-34.1	-	-	-	Telescope sent to -34.500
09:25:43.86	SWS	-34.5	-	-	-	Telescope sent to -35.000
09:25:44.21	SWS	-35.0	-	-	-	Telescope sent to -35.500
09:25:44.57	SWS	-35.5	-	-	-	Telescope sent to -36.000
09:25:44.91	SWS	-36.0	-	-	-	Telescope sent to -36.500
09:25:45.26	SWS	-36.6	-	-	-	Telescope sent to -37.000
09:25:45.61	SWS	-37.1	-	-	-	Telescope sent to -37.500
09:25:45.96	SWS	-37.5	-	-	-	Telescope sent to -38.000
09:25:46.26	SWS	-38.0	-	-	-	Telescope sent to -38.500
09:25:46.61	SWS	-38.6	-	-	-	Telescope sent to -39.000
09:25:46.96	SWS	-39.1	-	-	-	Telescope sent to -39.500
09:25:47.30	SWS	-39.6	-	-	-	Telescope sent to -40.000
09:25:47.65	SWS	-40.1	-	-	-	Telescope sent to -40.500
09:25:48.01	SWS	-40.5	-	-	-	Telescope sent to -41.000
09:25:48.40	SWS	-41.0	-	-	-	Telescope sent to -41.500
09:25:48.44	---	-	-	-	-	*** stray reflec
09:25:48.75	SWS	-41.5	-	-	-	Telescope sent to -42.000
09:25:49.12	SWS	-42.0	-	-	-	Telescope sent to -42.500
09:25:49.47	SWS	-42.6	-	-	-	Telescope sent to -43.000
09:25:49.82	SWS	-43.0	-	-	-	Telescope sent to -43.500
09:25:50.18	SWS	-43.5	-	-	-	Telescope sent to -44.000
09:25:50.53	SWS	-44.0	-	-	-	Telescope sent to -44.500
09:25:50.88	SWS	-44.6	-	-	-	Telescope sent to -45.000
09:25:51.24	SWS	-45.0	-	-	-	Telescope sent to -45.500
09:25:51.61	SWS	-45.5	-	-	-	Telescope sent to -46.000
09:25:51.95	SWS	-46.0	-	-	-	Telescope sent to -46.500
09:25:52.29	SWS	-46.6	-	-	-	Telescope sent to -47.000
09:25:52.64	SWS	-47.0	-	-	-	Telescope sent to -47.500
09:25:53.01	SWS	-47.5	-	-	-	Telescope sent to -48.000
09:25:53.40	SWS	-48.0	-	-	-	Telescope sent to -48.500
09:25:53.76	SWS	-48.6	-	-	-	Telescope sent to -49.000
09:25:54.11	SWS	-49.0	-	-	-	Telescope sent to -49.500
09:25:54.46	SWS	-49.6	-	-	-	Telescope sent to -50.000
09:25:54.81	SWS	-50.0	-	-	-	Telescope sent to -50.500
09:25:55.17	SWS	-50.6	-	-	-	Telescope sent to -51.000
09:25:55.52	SWS	-51.0	-	-	-	Telescope sent to -51.500
09:25:55.87	SWS	-51.5	-	-	-	Telescope sent to -52.000
09:25:56.23	SWS	-52.0	-	-	-	Telescope sent to -52.500
09:25:56.58	SWS	-52.5	-	-	-	Telescope sent to -53.000
09:25:56.93	SWS	-53.0	-	-	-	Telescope sent to -53.500
09:25:57.28	SWS	-53.6	-	-	-	Telescope sent to -54.000
09:25:57.63	SWS	-54.0	-	-	-	Telescope sent to -54.500
09:25:57.98	SWS	-54.6	-	-	-	Telescope sent to -55.000

09:25:58.33	SWS	-55.0	-	-	-	Telescope sent to -55.500
09:25:58.68	SWS	-55.5	-	-	-	Telescope sent to -56.000
09:25:59.03	SWS	-56.0	-	-	-	Telescope sent to -56.500
09:25:59.39	SWS	-56.5	-	-	-	Telescope sent to -57.000
09:25:59.73	SWS	-57.0	-	-	-	Telescope sent to -57.500
09:26:00.08	SWS	-57.5	-	-	-	Telescope sent to -58.000
09:26:00.43	SWS	-58.1	-	-	-	Telescope sent to -58.500
09:26:00.79	SWS	-58.5	-	-	-	Telescope sent to -59.000
09:26:01.18	SWS	-59.0	-	-	-	Telescope sent to -59.500
09:26:01.53	SWS	-59.5	-	-	-	Telescope sent to -60.000
09:26:01.88	SWS	-60.1	-	-	-	Telescope sent to -60.000
09:26:02.23	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:02.58	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:02.94	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:03.30	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:03.66	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:04.00	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:04.39	SWS	-60.0	-	-	-	Telescope sent to -60.000
09:26:05.77	---	-	-	-	-	*** end of stray reflec
09:26:09.27	SWS	-60.0	-	-	-	Telescope sent to -59.500
09:26:09.62	SWS	-59.5	-	-	-	Telescope sent to -59.000
09:26:09.95	SWS	-59.0	-	-	-	Telescope sent to -58.500
09:26:10.36	SWS	-58.5	-	-	-	Telescope sent to -58.000
09:26:12.04	SWS	-58.0	-	-	-	Telescope sent to -57.500
09:26:12.96	SWS	-57.5	-	-	-	Telescope sent to -57.000
09:26:13.90	SWS	-57.0	-	-	-	Telescope sent to -56.500
09:26:14.41	SWS	-56.5	-	-	-	Telescope sent to -56.000
09:26:15.01	SWS	-56.0	-	-	-	Telescope sent to -55.500
09:26:16.53	SWS	-55.5	-	-	-	Telescope sent to -55.000
09:26:17.55	SWS	-55.0	-	-	-	Telescope sent to -54.500
09:26:23.35	---	-	-	-	-	*** start of stray reflec
09:26:25.82	SWS	-54.5	-	-	-	Telescope sent to -54.000
09:26:26.21	SWS	-54.0	-	-	-	Telescope sent to -53.500
09:26:26.56	SWS	-53.5	-	-	-	Telescope sent to -53.000
09:26:26.94	SWS	-53.0	-	-	-	Telescope sent to -52.500
09:26:27.31	SWS	-52.5	-	-	-	Telescope sent to -52.000
09:26:27.66	SWS	-52.0	-	-	-	Telescope sent to -51.500
09:26:28.00	SWS	-51.5	-	-	-	Telescope sent to -51.000
09:26:28.41	SWS	-51.0	-	-	-	Telescope sent to -50.500
09:26:28.76	SWS	-50.5	-	-	-	Telescope sent to -50.000
09:26:29.12	SWS	-50.0	-	-	-	Telescope sent to -49.500
09:26:29.47	SWS	-49.5	-	-	-	Telescope sent to -49.000
09:26:29.84	SWS	-49.0	-	-	-	Telescope sent to -48.500
09:26:30.17	SWS	-48.5	-	-	-	Telescope sent to -48.000
09:26:31.10	SWS	-48.0	-	-	-	Telescope sent to -47.500
09:26:31.65	SWS	-47.5	-	-	-	Telescope sent to -47.000
09:26:32.61	SWS	-47.0	-	-	-	Telescope sent to -46.500
09:26:32.97	SWS	-46.5	-	-	-	Telescope sent to -46.000
09:26:42.17	---	-	-	-	-	*** just passed peak in str ref
09:26:44.05	SWS	-46.0	-	-	-	Telescope sent to -45.500
09:26:44.40	SWS	-45.5	-	-	-	Telescope sent to -45.000
09:26:44.75	SWS	-45.0	-	-	-	Telescope sent to -44.500
09:26:45.14	SWS	-44.5	-	-	-	Telescope sent to -44.000
09:26:45.49	SWS	-44.0	-	-	-	Telescope sent to -43.500
09:26:45.86	SWS	-43.5	-	-	-	Telescope sent to -43.000
09:26:46.19	SWS	-43.0	-	-	-	Telescope sent to -42.500
09:26:46.54	SWS	-42.5	-	-	-	Telescope sent to -42.000
09:26:46.90	SWS	-42.0	-	-	-	Telescope sent to -41.500
09:26:47.29	SWS	-41.5	-	-	-	Telescope sent to -41.000
09:26:47.64	SWS	-41.0	-	-	-	Telescope sent to -40.500
09:26:48.02	SWS	-40.5	-	-	-	Telescope sent to -40.000
09:26:48.40	SWS	-40.0	-	-	-	Telescope sent to -39.500
09:26:48.75	SWS	-39.5	-	-	-	Telescope sent to -39.000
09:26:49.13	SWS	-39.0	-	-	-	Telescope sent to -38.500
09:26:49.50	SWS	-38.5	-	-	-	Telescope sent to -38.000
09:26:49.90	SWS	-38.0	-	-	-	Telescope sent to -37.500
09:26:50.22	SWS	-37.5	-	-	-	Telescope sent to -37.000
09:26:50.53	SWS	-37.0	-	-	-	Telescope sent to -36.500
09:26:50.88	SWS	-36.5	-	-	-	Telescope sent to -36.000

09:26:51.22	SWS	-36.0	-	-	-	Telescope sent to -35.500
09:26:51.57	SWS	-35.5	-	-	-	Telescope sent to -35.000
09:26:51.93	SWS	-35.0	-	-	-	Telescope sent to -34.500
09:26:52.28	SWS	-34.5	-	-	-	Telescope sent to -34.000
09:26:52.64	SWS	-34.0	-	-	-	Telescope sent to -33.500
09:26:53.00	SWS	-33.5	-	-	-	Telescope sent to -33.000
09:26:53.39	SWS	-33.0	-	-	-	Telescope sent to -32.500
09:26:53.75	SWS	-32.5	-	-	-	Telescope sent to -32.000
09:26:54.10	SWS	-32.0	-	-	-	Telescope sent to -31.500
09:26:58.63	---	-	-	-	-	*** end of strya refl
09:27:00.80	SWS	-31.5	-	-	-	Telescope sent to -31.000
09:27:01.18	SWS	-31.0	-	-	-	Telescope sent to -30.500
09:27:01.56	SWS	-30.5	-	-	-	Telescope sent to -30.000
09:27:01.91	SWS	-30.0	-	-	-	Telescope sent to -29.500
09:27:02.31	SWS	-29.5	-	-	-	Telescope sent to -29.000
09:27:02.67	SWS	-29.0	-	-	-	Telescope sent to -28.500
09:27:03.02	SWS	-28.5	-	-	-	Telescope sent to -28.000
09:27:03.40	SWS	-28.0	-	-	-	Telescope sent to -27.500
09:27:03.75	SWS	-27.5	-	-	-	Telescope sent to -27.000
09:27:08.96	SWS	-27.0	-	-	-	Telescope at scan limit - going to 55.0
09:27:09.41	SWS	-24.8	-	-	-	Telescope sent to -40.000
09:27:16.27	SWS	52.6	-	-	-	Telescope at scan limit - going to -40.0
09:27:16.96	SWS	44.4	-	-	-	Telescope at scan limit - going to -40.0
09:27:17.69	SWS	35.6	-	-	-	Telescope at scan limit - going to -40.0
09:27:18.42	SWS	26.8	-	-	-	Telescope at scan limit - going to -40.0
09:27:19.18	SWS	18.0	-	-	-	Telescope at scan limit - going to -40.0
09:27:19.92	SWS	8.8	-	-	-	Telescope at scan limit - going to -40.0
09:27:20.64	SWS	0.2	-	-	-	Telescope at scan limit - going to 55.0
09:27:21.40	SWS	-8.9	-	-	-	Telescope at scan limit - going to 55.0
09:27:22.18	SWS	-17.7	-	-	-	Telescope at scan limit - going to 55.0
09:27:22.92	SWS	-27.0	-	-	-	Telescope at scan limit - going to 55.0
09:27:23.65	SWS	-35.7	-	-	-	Telescope at scan limit - going to 55.0
09:27:24.40	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:27:32.56	SWS	54.6	-	-	-	Telescope at scan limit - going to -40.0
09:27:40.74	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:27:48.86	SWS	54.2	-	-	-	Telescope at scan limit - going to -40.0
09:27:53.89	USH	-	-	40	40	Dark measurement started.
09:27:53.93	SWS	-	-	40	40	Dark measurement started.
09:27:53.95	LSH	-	-	40	40	Dark measurement started.
09:27:54.37	SWS	-	-	40	40	Dark measurement started.
09:27:54.75	USH	-	-	40	40	Manual scene recording started.
09:27:55.22	LSH	-	-	40	40	Manual scene recording started.
09:27:55.42	SWS	-	-	-	-	Idling
09:27:56.16	SWS	-	-	40	40	Dark measurement started.
09:27:56.22	USH	-	-	40	40	Dark measurement started.
09:27:56.23	LSH	-	-	40	40	Dark measurement started.
09:27:57.02	SWS	-	-	-	-	Idling
09:27:57.13	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:27:57.35	USH	-	-	40	40	Manual scene recording started.
09:27:57.57	LSH	-	-	40	40	Manual scene recording started.
09:27:58.14	SWS	-	-	40	40	Manual scene recording started.
09:28:05.30	SWS	54.6	-	-	-	Telescope at scan limit - going to -40.0
09:28:13.46	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:28:21.63	SWS	54.6	-	-	-	Telescope at scan limit - going to -40.0
09:28:29.79	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
09:28:38.46	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:28:46.57	SWS	-38.9	-	-	-	Telescope at scan limit - going to 55.0
09:28:54.74	SWS	54.5	-	-	-	Telescope at scan limit - going to -40.0
09:29:03.45	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:29:11.56	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:29:19.81	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:29:28.48	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:29:36.69	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:29:44.86	SWS	54.7	-	-	-	Telescope at scan limit - going to -40.0
09:29:52.99	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
09:30:01.23	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:30:09.45	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:30:17.58	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:30:25.75	SWS	-39.8	-	-	-	Telescope at scan limit - going to 55.0

09:30:34.00	SWS	55.1	-	-	-	Telescope at scan limit - going to -40.0
09:30:42.17	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
09:30:50.39	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:30:58.59	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:31:06.80	SWS	54.9	-	-	-	Telescope at scan limit - going to -40.0
09:31:14.93	SWS	-39.3	-	-	-	Telescope at scan limit - going to 55.0
09:31:23.09	SWS	53.9	-	-	-	Telescope at scan limit - going to -40.0
09:31:26.54	USH	-	-	40	40	Dark measurement started.
09:31:26.54	LSH	-	-	40	40	Dark measurement started.
09:31:26.59	SWS	-	-	40	40	Dark measurement started.
09:31:27.45	USH	-	-	40	40	Manual scene recording started.
09:31:27.67	LSH	-	-	40	40	Manual scene recording started.
09:31:27.82	SWS	-	-	40	40	Manual scene recording started.
09:31:31.34	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:31:39.50	SWS	54.3	-	-	-	Telescope at scan limit - going to -40.0
09:31:47.66	SWS	-39.5	-	-	-	Telescope at scan limit - going to 55.0
09:31:55.88	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:32:04.06	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:32:12.22	SWS	54.6	-	-	-	Telescope at scan limit - going to -40.0
09:32:20.42	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:32:28.57	SWS	54.6	-	-	-	Telescope at scan limit - going to -40.0
09:32:36.75	SWS	-39.6	-	-	-	Telescope at scan limit - going to 55.0
09:32:44.90	SWS	54.4	-	-	-	Telescope at scan limit - going to -40.0
09:32:53.12	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:33:01.30	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:33:02.69	---	-	-	-	-	*** satellite overpass MetOp (IASI)
09:33:09.45	SWS	-39.4	-	-	-	Telescope at scan limit - going to 55.0
09:33:17.58	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:33:25.82	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:33:33.95	SWS	54.2	-	-	-	Telescope at scan limit - going to -40.0
09:33:35.08	SWS	46.0	-	-	-	Telescope stopped.
09:33:40.61	SWS	46.0	-	-	-	Telescope sent to 0.000
09:33:52.89	SWS	0.0	-	-	-	Telescope sent to -0.500
09:33:54.33	SWS	-0.5	-	-	-	Telescope sent to -1.000
09:33:55.49	SWS	-1.0	-	-	-	Telescope sent to -1.500
09:33:56.97	SWS	-1.5	-	-	-	Telescope sent to -2.000
09:33:57.98	SWS	-2.0	-	-	-	Telescope sent to -2.500
09:33:58.89	SWS	-2.5	-	-	-	Telescope sent to -3.000
09:33:59.30	SWS	-3.0	-	-	-	Telescope sent to -3.500
09:33:59.83	SWS	-3.5	-	-	-	Telescope sent to -4.000
09:34:00.32	SWS	-4.0	-	-	-	Telescope sent to -4.500
09:34:00.78	SWS	-4.5	-	-	-	Telescope sent to -5.000
09:34:01.32	SWS	-5.0	-	-	-	Telescope sent to -5.500
09:34:02.79	SWS	-5.5	-	-	-	Telescope sent to -6.000
09:34:05.98	SWS	-6.0	-	-	-	Telescope sent to -5.500
09:34:18.79	SWS	-5.5	-	-	-	Telescope sent to -5.000
09:39:27.76	---	-	-	-	-	*** run 7.3
09:39:53.47	SWS	-5.0	-	-	-	Telescope sent to -5.500
09:39:54.42	SWS	-5.5	-	-	-	Telescope sent to -6.000
09:39:55.36	SWS	-6.0	-	-	-	Telescope sent to -6.500
09:39:55.72	SWS	-6.5	-	-	-	Telescope sent to -7.000
09:39:56.25	SWS	-7.0	-	-	-	Telescope sent to -7.500
09:39:57.79	SWS	-7.5	-	-	-	Telescope sent to -7.000
09:39:58.17	SWS	-7.0	-	-	-	Telescope sent to -6.500
09:39:58.55	SWS	-6.5	-	-	-	Telescope sent to -6.000
09:39:58.94	SWS	-6.0	-	-	-	Telescope sent to -5.500
09:39:59.31	SWS	-5.5	-	-	-	Telescope sent to -5.000
09:39:59.69	SWS	-5.0	-	-	-	Telescope sent to -4.500
09:40:00.04	SWS	-4.5	-	-	-	Telescope sent to -4.000
09:40:00.41	SWS	-4.0	-	-	-	Telescope sent to -3.500
09:40:00.76	SWS	-3.5	-	-	-	Telescope sent to -3.000
09:40:01.11	SWS	-3.0	-	-	-	Telescope sent to -2.500
09:40:02.25	SWS	-2.5	-	-	-	Telescope sent to -2.000
09:40:02.62	SWS	-2.0	-	-	-	Telescope sent to -1.500
09:40:03.00	SWS	-1.5	-	-	-	Telescope sent to -1.000
09:40:03.44	SWS	-1.0	-	-	-	Telescope sent to -0.500
09:40:03.82	SWS	-0.5	-	-	-	Telescope sent to 0.000
09:40:04.23	SWS	0.0	-	-	-	Telescope sent to 0.500
09:40:04.65	SWS	0.5	-	-	-	Telescope sent to 1.000

09:40:05.01	SWS	1.0	-	-	-	Telescope sent to 1.500
09:40:05.46	SWS	1.5	-	-	-	Telescope sent to 2.000
09:40:05.85	SWS	2.0	-	-	-	Telescope sent to 2.500
09:40:06.22	SWS	2.5	-	-	-	Telescope sent to 3.000
09:40:06.61	SWS	3.0	-	-	-	Telescope sent to 3.500
09:40:06.92	SWS	3.5	-	-	-	Telescope sent to 4.000
09:40:07.32	SWS	4.0	-	-	-	Telescope sent to 4.500
09:40:07.69	SWS	4.5	-	-	-	Telescope sent to 5.000
09:40:08.01	SWS	5.0	-	-	-	Telescope sent to 5.500
09:40:08.37	SWS	5.5	-	-	-	Telescope sent to 6.000
09:40:08.75	SWS	6.0	-	-	-	Telescope sent to 6.500
09:40:09.14	SWS	6.5	-	-	-	Telescope sent to 7.000
09:40:09.52	SWS	7.0	-	-	-	Telescope sent to 7.500
09:40:09.86	SWS	7.5	-	-	-	Telescope sent to 8.000
09:40:10.22	SWS	8.0	-	-	-	Telescope sent to 8.500
09:40:10.60	SWS	8.5	-	-	-	Telescope sent to 9.000
09:40:10.98	SWS	9.0	-	-	-	Telescope sent to 9.500
09:40:11.35	SWS	9.5	-	-	-	Telescope sent to 10.000
09:40:11.74	SWS	10.0	-	-	-	Telescope sent to 10.500
09:40:12.14	SWS	10.5	-	-	-	Telescope sent to 11.000
09:40:12.53	SWS	11.0	-	-	-	Telescope sent to 11.500
09:40:12.92	SWS	11.5	-	-	-	Telescope sent to 12.000
09:40:13.28	SWS	12.0	-	-	-	Telescope sent to 12.500
09:40:13.61	SWS	12.5	-	-	-	Telescope sent to 13.000
09:40:13.96	SWS	13.0	-	-	-	Telescope sent to 13.500
09:40:14.33	SWS	13.5	-	-	-	Telescope sent to 14.000
09:40:14.69	SWS	14.0	-	-	-	Telescope sent to 14.500
09:40:15.07	SWS	14.5	-	-	-	Telescope sent to 15.000
09:40:15.43	SWS	15.0	-	-	-	Telescope sent to 15.500
09:40:15.78	SWS	15.5	-	-	-	Telescope sent to 16.000
09:40:16.17	SWS	16.0	-	-	-	Telescope sent to 16.500
09:40:16.53	SWS	16.5	-	-	-	Telescope sent to 17.000
09:40:16.89	SWS	17.0	-	-	-	Telescope sent to 17.500
09:40:17.28	SWS	17.5	-	-	-	Telescope sent to 18.000
09:40:17.63	SWS	18.0	-	-	-	Telescope sent to 18.500
09:40:17.99	SWS	18.5	-	-	-	Telescope sent to 19.000
09:40:18.34	SWS	19.0	-	-	-	Telescope sent to 19.500
09:40:18.70	SWS	19.5	-	-	-	Telescope sent to 20.000
09:40:19.10	SWS	20.0	-	-	-	Telescope sent to 20.500
09:40:19.46	SWS	20.5	-	-	-	Telescope sent to 21.000
09:40:19.82	SWS	21.0	-	-	-	Telescope sent to 21.500
09:40:20.21	SWS	21.5	-	-	-	Telescope sent to 22.000
09:40:20.56	SWS	22.0	-	-	-	Telescope sent to 22.500
09:40:20.93	SWS	22.5	-	-	-	Telescope sent to 23.000
09:40:21.29	SWS	23.0	-	-	-	Telescope sent to 23.500
09:40:21.65	SWS	23.5	-	-	-	Telescope sent to 24.000
09:40:22.01	SWS	24.0	-	-	-	Telescope sent to 24.500
09:40:22.40	SWS	24.5	-	-	-	Telescope sent to 25.000
09:40:22.75	SWS	25.0	-	-	-	Telescope sent to 25.500
09:40:23.13	SWS	25.5	-	-	-	Telescope sent to 26.000
09:40:23.48	SWS	26.0	-	-	-	Telescope sent to 26.500
09:40:23.84	SWS	26.5	-	-	-	Telescope sent to 27.000
09:40:24.20	SWS	27.0	-	-	-	Telescope sent to 27.500
09:40:24.57	SWS	27.5	-	-	-	Telescope sent to 28.000
09:40:26.22	SWS	28.0	-	-	-	Telescope sent to 28.500
09:40:26.59	SWS	28.5	-	-	-	Telescope sent to 29.000
09:40:26.92	SWS	29.0	-	-	-	Telescope sent to 29.500
09:40:27.28	SWS	29.5	-	-	-	Telescope sent to 30.000
09:40:27.65	SWS	30.0	-	-	-	Telescope sent to 30.500
09:40:28.04	SWS	30.5	-	-	-	Telescope sent to 31.000
09:40:28.44	SWS	31.0	-	-	-	Telescope sent to 31.500
09:40:28.82	SWS	31.5	-	-	-	Telescope sent to 32.000
09:40:29.20	SWS	32.0	-	-	-	Telescope sent to 32.500
09:40:29.59	SWS	32.5	-	-	-	Telescope sent to 33.000
09:40:29.98	SWS	33.0	-	-	-	Telescope sent to 33.500
09:40:30.32	SWS	33.5	-	-	-	Telescope sent to 34.000
09:40:30.69	SWS	34.0	-	-	-	Telescope sent to 34.500
09:40:31.08	SWS	34.5	-	-	-	Telescope sent to 35.000
09:40:31.51	SWS	35.0	-	-	-	Telescope sent to 35.500

09:40:31.96	SWS	35.5	-	-	-	Telescope sent to 36.000
09:40:32.32	SWS	36.0	-	-	-	Telescope sent to 36.500
09:40:32.75	SWS	36.5	-	-	-	Telescope sent to 37.000
09:40:33.22	SWS	37.0	-	-	-	Telescope sent to 37.500
09:40:33.58	SWS	37.5	-	-	-	Telescope sent to 38.000
09:40:33.96	SWS	38.0	-	-	-	Telescope sent to 38.500
09:40:34.30	SWS	38.5	-	-	-	Telescope sent to 39.000
09:40:34.69	SWS	39.0	-	-	-	Telescope sent to 39.500
09:40:35.09	SWS	39.5	-	-	-	Telescope sent to 40.000
09:40:35.48	SWS	40.0	-	-	-	Telescope sent to 40.500
09:40:35.84	SWS	40.5	-	-	-	Telescope sent to 41.000
09:40:36.19	SWS	41.0	-	-	-	Telescope sent to 41.500
09:40:36.57	SWS	41.5	-	-	-	Telescope sent to 42.000
09:40:36.96	SWS	42.0	-	-	-	Telescope sent to 42.500
09:40:37.37	SWS	42.5	-	-	-	Telescope sent to 43.000
09:40:37.79	SWS	43.0	-	-	-	Telescope sent to 43.500
09:40:38.18	SWS	43.5	-	-	-	Telescope sent to 44.000
09:40:38.53	SWS	44.0	-	-	-	Telescope sent to 44.500
09:40:38.92	SWS	44.5	-	-	-	Telescope sent to 45.000
09:40:40.43	SWS	45.0	-	-	-	Telescope sent to 45.500
09:40:40.79	SWS	45.5	-	-	-	Telescope sent to 46.000
09:40:41.28	SWS	46.0	-	-	-	Telescope sent to 46.500
09:40:41.70	SWS	46.5	-	-	-	Telescope sent to 47.000
09:40:42.09	SWS	47.0	-	-	-	Telescope sent to 47.500
09:40:46.55	SWS	47.5	-	-	-	Telescope sent to -40.000
09:40:54.03	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:41:02.25	SWS	55.1	-	-	-	Telescope at scan limit - going to -40.0
09:41:10.42	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:41:18.66	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:41:26.94	SWS	-40.1	-	-	-	Telescope at scan limit - going to 55.0
09:41:28.01	SWS	-31.3	-	-	-	Telescope stopped.
09:41:32.39	SWS	-31.3	-	-	-	Telescope sent to 55.500
09:41:32.77	SWS	-8.9	-	-	-	Telescope sent to 56.000
09:41:33.18	SWS	32.5	-	-	-	Telescope sent to 56.500
09:41:33.53	SWS	56.0	-	-	-	Telescope sent to 57.000
09:41:33.89	SWS	57.0	-	-	-	Telescope sent to 57.500
09:41:34.25	SWS	57.5	-	-	-	Telescope sent to 58.000
09:41:34.61	SWS	58.0	-	-	-	Telescope sent to 58.500
09:41:34.97	SWS	58.5	-	-	-	Telescope sent to 59.000
09:41:45.11	SWS	59.0	-	-	-	Telescope at scan limit - going to -40.0
09:41:45.57	SWS	56.7	-	-	-	Telescope sent to -40.000
09:41:53.62	SWS	-39.5	-	-	-	Telescope at scan limit - going to 55.0
09:42:01.81	SWS	54.8	-	-	-	Telescope at scan limit - going to -40.0
09:42:10.00	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:42:18.36	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:42:26.53	SWS	-39.8	-	-	-	Telescope at scan limit - going to 55.0
09:42:34.65	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:42:42.90	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:42:51.11	SWS	54.4	-	-	-	Telescope at scan limit - going to -40.0
09:42:59.29	SWS	-39.7	-	-	-	Telescope at scan limit - going to 55.0
09:43:07.47	SWS	54.7	-	-	-	Telescope at scan limit - going to -40.0
09:43:15.68	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:43:23.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
09:43:32.21	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:43:40.35	SWS	54.1	-	-	-	Telescope at scan limit - going to -40.0
09:43:48.55	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
09:43:52.56	---	-	-	-	-	*** end of run
09:43:55.01	SWS	33.1	-	-	-	Telescope stopped.
09:44:01.09	SWS	33.1	-	-	-	Telescope sent to 0.000
09:44:03.15	SWS	-	-	40	40	Dark measurement started.
09:44:03.18	LSH	-	-	40	40	Dark measurement started.
09:44:03.23	USH	-	-	40	40	Dark measurement started.
09:44:04.01	SWS	-	-	40	40	Manual scene recording started.
09:44:04.28	LSH	-	-	40	40	Manual scene recording started.
09:44:04.48	USH	-	-	40	40	Manual scene recording started.
09:44:05.53	USH	-	-	40	40	Dark measurement started.
09:44:05.53	SWS	-	-	40	40	Dark measurement started.
09:44:05.61	LSH	-	-	40	40	Dark measurement started.
09:44:06.38	USH	-	-	40	40	Manual scene recording started.

09:44:06.62	SWS	-	-	40	40	Manual scene recording started.
09:44:06.81	LSH	-	-	40	40	Manual scene recording started.
09:44:08.01	SWS	-	-	40	40	Dark measurement started.
09:44:08.03	USH	-	-	40	40	Dark measurement started.
09:44:08.12	LSH	-	-	40	40	Dark measurement started.
09:44:08.70	LSH	-	-	40	40	Dark measurement started.
09:44:08.87	SWS	-	-	40	40	Manual scene recording started.
09:44:09.13	USH	-	-	40	40	Manual scene recording started.
09:44:09.60	LSH	-	-	-	-	Idling
09:44:10.63	LSH	-	-	40	40	Dark measurement started.
09:44:10.71	USH	-	-	40	40	Dark measurement started.
09:44:10.75	SWS	-	-	40	40	Dark measurement started.
09:44:11.31	SWS	-	-	40	40	Dark measurement started.
09:44:11.52	LSH	-	-	-	-	Idling
09:44:11.70	USH	-	-	40	40	Manual scene recording started.
09:44:12.17	SWS	-	-	-	-	Idling
09:44:13.42	SWS	-	-	40	40	Manual scene recording started.
09:44:13.44	LSH	-	-	40	40	Manual scene recording started.
09:46:10.45	---	-	-	-	-	*** spiral profile descent p7
09:52:00.78	LSH	-	-	40	40	Dark measurement started.
09:52:00.79	USH	-	-	40	40	Dark measurement started.
09:52:00.88	SWS	-	-	40	40	Dark measurement started.
09:52:01.68	LSH	-	-	40	40	Manual scene recording started.
09:52:01.86	USH	-	-	40	40	Manual scene recording started.
09:52:02.15	SWS	-	-	40	40	Manual scene recording started.
09:52:03.96	LSH	-	-	40	40	Dark measurement started.
09:52:04.02	USH	-	-	40	40	Dark measurement started.
09:52:04.02	SWS	-	-	40	40	Dark measurement started.
09:52:04.83	LSH	-	-	40	40	Manual scene recording started.
09:52:05.07	USH	-	-	40	40	Manual scene recording started.
09:52:05.30	SWS	-	-	40	40	Manual scene recording started.
09:58:04.20	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:58:14.93	---	-	-	-	-	*** entering an aerosol layer
09:58:32.32	---	-	-	-	-	*** visual and on PCASP and probably core
chem as well						
09:58:35.91	SWS	-	-	40	40	Dark measurement started.
09:58:35.93	LSH	-	-	40	40	Dark measurement started.
09:58:35.99	USH	-	-	40	40	Dark measurement started.
09:58:36.81	SWS	-	-	40	40	Manual scene recording started.
09:58:37.08	LSH	-	-	40	40	Manual scene recording started.
09:58:37.31	USH	-	-	40	40	Manual scene recording started.
09:58:41.93	USH	-	-	40	40	Dark measurement started.
09:58:41.95	LSH	-	-	40	40	Dark measurement started.
09:58:42.01	SWS	-	-	40	40	Dark measurement started.
09:58:42.77	USH	-	-	40	40	Manual scene recording started.
09:58:43.01	LSH	-	-	40	40	Manual scene recording started.
09:58:43.26	SWS	-	-	40	40	Manual scene recording started.
09:59:28.96	LSH	-	-	40	40	Dark measurement started.
09:59:29.05	SWS	-	-	40	40	Dark measurement started.
09:59:29.17	USH	-	-	40	40	Dark measurement started.
09:59:29.83	LSH	-	-	40	40	Manual scene recording started.
09:59:30.07	SWS	-	-	40	40	Manual scene recording started.
09:59:30.30	USH	-	-	40	40	Manual scene recording started.
09:59:31.37	LSH	-	-	40	40	Dark measurement started.
09:59:31.39	USH	-	-	40	40	Dark measurement started.
09:59:31.40	SWS	-	-	40	40	Dark measurement started.
09:59:32.27	USH	-	-	40	40	Manual scene recording started.
09:59:32.50	LSH	-	-	40	40	Manual scene recording started.
09:59:32.71	SWS	-	-	40	40	Manual scene recording started.
10:00:17.78	---	-	-	-	-	*** end of profile
10:00:21.04	SWS	-	-	40	40	Dark measurement started.
10:00:21.05	USH	-	-	40	40	Dark measurement started.
10:00:21.21	LSH	-	-	40	40	Dark measurement started.
10:00:21.90	SWS	-	-	40	40	Manual scene recording started.
10:00:22.21	USH	-	-	40	40	Manual scene recording started.
10:00:22.45	LSH	-	-	40	40	Manual scene recording started.
10:00:40.20	---	-	-	-	-	*** orbits to right
10:00:51.13	---	-	-	-	-	*** 60 deg orbit
10:01:49.38	SWS	-	-	-	-	Warning: Clipping may be occurring.

10:01:55.27	USH	-	-	40	40	Dark measurement started.
10:01:55.30	SWS	-	-	40	40	Dark measurement started.
10:01:55.31	LSH	-	-	40	40	Dark measurement started.
10:01:56.22	USH	-	-	40	40	Manual scene recording started.
10:01:56.40	SWS	-	-	40	40	Manual scene recording started.
10:01:56.62	LSH	-	-	40	40	Manual scene recording started.
10:02:02.02	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:02:08.63	---	-	-	-	-	*** orbit 4 60 deg
10:03:13.41	---	-	-	-	-	*** end of orbit
10:03:16.49	SWS	-	-	40	40	Dark measurement started.
10:03:16.51	USH	-	-	40	40	Dark measurement started.
10:03:16.54	LSH	-	-	40	40	Dark measurement started.
10:03:17.42	SWS	-	-	40	40	Manual scene recording started.
10:03:17.61	USH	-	-	40	40	Manual scene recording started.
10:03:17.78	LSH	-	-	40	40	Manual scene recording started.
10:03:24.73	LSH	-	-	40	40	Dark measurement started.
10:03:24.78	SWS	-	-	40	40	Dark measurement started.
10:03:24.83	USH	-	-	40	40	Dark measurement started.
10:03:25.63	LSH	-	-	40	40	Manual scene recording started.
10:03:25.81	SWS	-	-	40	40	Manual scene recording started.
10:03:26.04	USH	-	-	40	40	Manual scene recording started.
10:08:24.13	LSH	-	-	40	40	Dark measurement started.
10:08:24.19	SWS	-	-	40	40	Dark measurement started.
10:08:24.30	USH	-	-	40	40	Dark measurement started.
10:08:25.01	LSH	-	-	40	40	Manual scene recording started.
10:08:25.33	SWS	-	-	40	40	Manual scene recording started.
10:08:25.52	USH	-	-	40	40	Manual scene recording started.
10:08:27.16	LSH	-	-	40	40	Dark measurement started.
10:08:27.27	SWS	-	-	40	40	Dark measurement started.
10:08:27.31	USH	-	-	40	40	Dark measurement started.
10:08:28.01	LSH	-	-	40	40	Manual scene recording started.
10:08:28.29	SWS	-	-	40	40	Manual scene recording started.
10:08:28.49	USH	-	-	40	40	Manual scene recording started.
10:08:50.47	SWS	0.0	-	-	-	Telescope at scan limit - going to 55.0
10:08:50.93	SWS	2.2	-	-	-	Telescope sent to -40.000
10:08:57.39	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:03.73	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:08.74	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:11.98	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:09:13.89	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:15.26	---	-	-	-	-	*** run 8 at FL 150 from A to BADEP
10:09:20.18	SWS	-39.8	-	-	-	Telescope at scan limit - going to 55.0
10:09:25.33	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:28.59	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:09:30.56	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:36.90	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:41.94	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:45.08	SWS	54.9	-	-	-	Telescope at scan limit - going to -40.0
10:09:46.98	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:09:53.35	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:09:58.41	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:01.64	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:10:03.40	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:09.87	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:10:15.01	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:18.18	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:10:20.14	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:26.42	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:10:31.63	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:34.66	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:10:37.46	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:10:39.16	---	-	-	-	-	*** stray reflec and saturation between aprox
12 and 35 deg						
10:10:42.93	SWS	-40.0	-	-	-	Telescope at scan limit - going to 55.0
10:10:47.43	SWS	9.8	-	-	-	Telescope stopped.
10:10:51.25	SWS	9.8	-	-	-	Telescope sent to 55.500
10:10:52.20	SWS	55.5	-	-	-	Telescope sent to 56.000
10:10:54.84	SWS	56.0	-	-	-	Telescope sent to 55.500
10:10:55.35	SWS	55.5	-	-	-	Telescope sent to 55.000



10:10:55.88	SWS	55.0	-	-	-	Telescope sent to 54.500
10:10:56.40	SWS	54.5	-	-	-	Telescope sent to 54.000
10:10:56.94	SWS	54.0	-	-	-	Telescope sent to 53.500
10:10:57.46	SWS	53.5	-	-	-	Telescope sent to 53.000
10:10:57.99	SWS	53.0	-	-	-	Telescope sent to 52.500
10:10:58.48	SWS	52.5	-	-	-	Telescope sent to 52.000
10:10:58.86	SWS	52.0	-	-	-	Telescope sent to 51.500
10:10:59.24	SWS	51.5	-	-	-	Telescope sent to 51.000
10:10:59.60	SWS	51.0	-	-	-	Telescope sent to 50.500
10:11:00.03	SWS	50.5	-	-	-	Telescope sent to 50.000
10:11:00.39	SWS	50.0	-	-	-	Telescope sent to 49.500
10:11:00.75	SWS	49.5	-	-	-	Telescope sent to 49.000
10:11:01.14	SWS	49.0	-	-	-	Telescope sent to 48.500
10:11:01.51	SWS	48.5	-	-	-	Telescope sent to 48.000
10:11:03.27	SWS	48.0	-	-	-	Telescope sent to 47.500
10:11:03.67	SWS	47.5	-	-	-	Telescope sent to 47.000
10:11:04.07	SWS	47.0	-	-	-	Telescope sent to 46.500
10:11:04.51	SWS	46.5	-	-	-	Telescope sent to 46.000
10:11:04.90	SWS	46.0	-	-	-	Telescope sent to 45.500
10:11:05.36	SWS	45.5	-	-	-	Telescope sent to 45.000
10:11:05.93	SWS	45.0	-	-	-	Telescope sent to 44.500
10:11:08.02	SWS	44.5	-	-	-	Telescope sent to 44.000
10:11:08.96	SWS	44.0	-	-	-	Telescope sent to 43.500
10:11:17.04	---	-	-	-	-	*** stray reflec start
10:11:19.65	SWS	43.5	-	-	-	Telescope sent to 43.000
10:11:20.20	SWS	43.0	-	-	-	Telescope sent to 42.500
10:11:20.79	SWS	42.5	-	-	-	Telescope sent to 42.000
10:11:21.30	SWS	42.0	-	-	-	Telescope sent to 41.500
10:11:21.74	SWS	41.5	-	-	-	Telescope sent to 41.000
10:11:22.68	SWS	41.0	-	-	-	Telescope sent to 40.500
10:11:23.04	SWS	40.5	-	-	-	Telescope sent to 40.000
10:11:23.57	SWS	40.0	-	-	-	Telescope sent to 39.500
10:11:24.18	SWS	39.5	-	-	-	Telescope sent to 39.000
10:11:24.68	SWS	39.0	-	-	-	Telescope sent to 38.500
10:11:25.18	SWS	38.5	-	-	-	Telescope sent to 38.000
10:11:25.69	SWS	38.0	-	-	-	Telescope sent to 37.500
10:11:26.17	SWS	37.5	-	-	-	Telescope sent to 37.000
10:11:26.62	SWS	37.0	-	-	-	Telescope sent to 36.500
10:11:27.06	SWS	36.5	-	-	-	Telescope sent to 36.000
10:11:27.52	SWS	36.0	-	-	-	Telescope sent to 35.500
10:11:28.01	SWS	35.5	-	-	-	Telescope sent to 35.000
10:11:28.57	SWS	35.0	-	-	-	Telescope sent to 34.500
10:11:28.71	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:11:28.98	SWS	34.5	-	-	-	Telescope sent to 34.000
10:11:29.41	SWS	34.0	-	-	-	Telescope sent to 33.500
10:11:29.86	SWS	33.5	-	-	-	Telescope sent to 33.000
10:11:30.35	SWS	33.0	-	-	-	Telescope sent to 32.500
10:11:30.75	SWS	32.5	-	-	-	Telescope sent to 32.000
10:11:31.18	SWS	32.0	-	-	-	Telescope sent to 31.500
10:11:31.66	SWS	31.5	-	-	-	Telescope sent to 31.000
10:11:32.02	SWS	31.0	-	-	-	Telescope sent to 30.500
10:11:32.51	SWS	30.5	-	-	-	Telescope sent to 30.000
10:11:32.98	SWS	30.0	-	-	-	Telescope sent to 29.500
10:11:33.41	SWS	29.5	-	-	-	Telescope sent to 29.000
10:11:33.87	SWS	29.0	-	-	-	Telescope sent to 28.500
10:11:34.28	SWS	28.5	-	-	-	Telescope sent to 28.000
10:11:36.36	SWS	28.0	-	-	-	Telescope sent to 27.500
10:11:36.69	SWS	27.5	-	-	-	Telescope sent to 27.000
10:11:37.07	SWS	27.0	-	-	-	Telescope sent to 26.500
10:11:37.45	SWS	26.5	-	-	-	Telescope sent to 26.000
10:11:37.80	SWS	26.0	-	-	-	Telescope sent to 25.500
10:11:38.20	SWS	25.5	-	-	-	Telescope sent to 25.000
10:11:38.60	SWS	25.0	-	-	-	Telescope sent to 24.500
10:11:38.99	SWS	24.5	-	-	-	Telescope sent to 24.000
10:11:39.48	SWS	24.0	-	-	-	Telescope sent to 23.500
10:11:39.92	SWS	23.5	-	-	-	Telescope sent to 23.000
10:11:40.26	SWS	23.0	-	-	-	Telescope sent to 22.500
10:11:40.65	SWS	22.5	-	-	-	Telescope sent to 22.000
10:11:41.17	SWS	22.0	-	-	-	Telescope sent to 21.500

10:11:41.62	SWS	21.5	-	-	-	Telescope sent to 21.000
10:11:42.16	SWS	21.0	-	-	-	Telescope sent to 20.500
10:11:43.09	SWS	20.5	-	-	-	Telescope sent to 20.000
10:11:43.53	SWS	20.0	-	-	-	Telescope sent to 19.500
10:11:44.48	SWS	19.5	-	-	-	Telescope sent to 19.000
10:11:44.89	SWS	19.0	-	-	-	Telescope sent to 18.500
10:11:45.83	SWS	18.5	-	-	-	Telescope sent to 18.000
10:11:46.19	SWS	18.0	-	-	-	Telescope sent to 17.500
10:11:46.76	SWS	17.5	-	-	-	Telescope sent to 17.000
10:11:47.71	SWS	17.0	-	-	-	Telescope sent to 16.500
10:11:48.03	SWS	16.5	-	-	-	Telescope sent to 16.000
10:11:48.44	SWS	16.0	-	-	-	Telescope sent to 15.500
10:11:48.89	SWS	15.5	-	-	-	Telescope sent to 15.000
10:11:49.84	SWS	15.0	-	-	-	Telescope sent to 14.500
10:11:50.20	SWS	14.5	-	-	-	Telescope sent to 14.000
10:11:50.58	SWS	14.0	-	-	-	Telescope sent to 13.500
10:11:51.06	SWS	13.5	-	-	-	Telescope sent to 13.000
10:11:51.49	SWS	13.0	-	-	-	Telescope sent to 12.500
10:11:51.98	SWS	12.5	-	-	-	Telescope sent to 12.000
10:11:52.89	SWS	12.0	-	-	-	Telescope sent to 11.500
10:11:54.43	SWS	11.5	-	-	-	Telescope sent to 11.000
10:11:55.36	SWS	11.0	-	-	-	Telescope sent to 10.500
10:11:56.89	SWS	10.5	-	-	-	Telescope sent to 10.000
10:11:57.84	SWS	10.0	-	-	-	Telescope sent to 9.500
10:11:58.82	SWS	9.5	-	-	-	Telescope sent to 9.000
10:12:07.17	---	-	-	-	-	*** end of stray refelkc
10:12:10.25	SWS	9.0	-	-	-	Telescope sent to 8.500
10:12:10.64	SWS	8.5	-	-	-	Telescope sent to 8.000
10:12:11.01	SWS	8.0	-	-	-	Telescope sent to 7.500
10:12:13.34	SWS	7.5	-	-	-	Telescope at scan limit - going to 55.0
10:12:13.79	SWS	9.7	-	-	-	Telescope sent to -40.000
10:12:14.32	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:12:17.88	SWS	51.5	-	-	-	Telescope at scan limit - going to -40.0
10:12:18.57	SWS	43.2	-	-	-	Telescope at scan limit - going to -40.0
10:12:19.21	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:12:19.35	SWS	33.9	-	-	-	Telescope at scan limit - going to -40.0
10:12:20.09	SWS	25.0	-	-	-	Telescope at scan limit - going to -40.0
10:12:20.88	SWS	15.4	-	-	-	Telescope at scan limit - going to -40.0
10:12:21.63	SWS	6.7	-	-	-	Telescope at scan limit - going to 55.0
10:12:22.35	SWS	-2.2	-	-	-	Telescope at scan limit - going to 55.0
10:12:23.15	SWS	-11.1	-	-	-	Telescope at scan limit - going to 55.0
10:12:23.88	SWS	-20.5	-	-	-	Telescope at scan limit - going to 55.0
10:12:24.63	SWS	-29.3	-	-	-	Telescope at scan limit - going to 55.0
10:12:25.36	SWS	-38.1	-	-	-	Telescope at scan limit - going to 55.0
10:12:30.31	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:12:33.56	SWS	55.0	-	-	-	Telescope at scan limit - going to -40.0
10:12:35.45	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:12:41.77	SWS	-40.0	-	-	-	Telescope at scan limit - going to 15.0
10:12:46.54	SWS	13.9	-	-	-	Telescope at scan limit - going to -40.0
10:12:51.32	SWS	-39.0	-	-	-	Telescope at scan limit - going to 15.0
10:12:56.67	SWS	15.0	-	-	-	Telescope at scan limit - going to -40.0
10:13:02.00	SWS	-40.0	-	-	-	Telescope at scan limit - going to 15.0
10:13:06.80	SWS	14.2	-	-	-	Telescope at scan limit - going to -40.0
10:13:11.52	SWS	-38.8	-	-	-	Telescope at scan limit - going to 15.0
10:13:16.37	SWS	14.6	-	-	-	Telescope at scan limit - going to -40.0
10:13:21.70	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:13:26.55	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:13:31.29	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:13:35.52	SWS	-	-	40	40	Dark measurement started.
10:13:35.60	USH	-	-	40	40	Dark measurement started.
10:13:35.64	LSH	-	-	40	40	Dark measurement started.
10:13:36.05	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:13:36.48	SWS	-	-	40	40	Manual scene recording started.
10:13:36.71	USH	-	-	40	40	Manual scene recording started.
10:13:36.95	LSH	-	-	40	40	Manual scene recording started.
10:13:40.96	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:13:45.71	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:13:50.50	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:13:55.32	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0

[illegible]

10:19:29.46	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:19:34.21	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:19:38.98	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:19:43.72	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:19:48.54	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:19:53.31	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:19:58.09	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:02.91	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:07.69	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:12.49	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:17.23	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:21.97	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:26.85	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:31.64	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:36.50	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:41.27	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:46.01	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:20:50.80	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:20:55.52	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:00.32	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:05.19	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:09.94	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:14.70	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:19.48	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:24.23	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:29.07	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:33.84	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:38.61	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:43.44	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:48.21	SWS	-40.0	-	-	-	Telescope at scan limit - going to 10.0
10:21:52.95	SWS	10.0	-	-	-	Telescope at scan limit - going to -40.0
10:21:55.91	---	-	-	-	-	*** end of run
10:21:56.38	SWS	-26.6	-	-	-	Telescope stopped.
10:22:02.99	SWS	-26.6	-	-	-	Telescope sent to 0.000
10:22:40.39	---	-	-	-	-	*** end of run